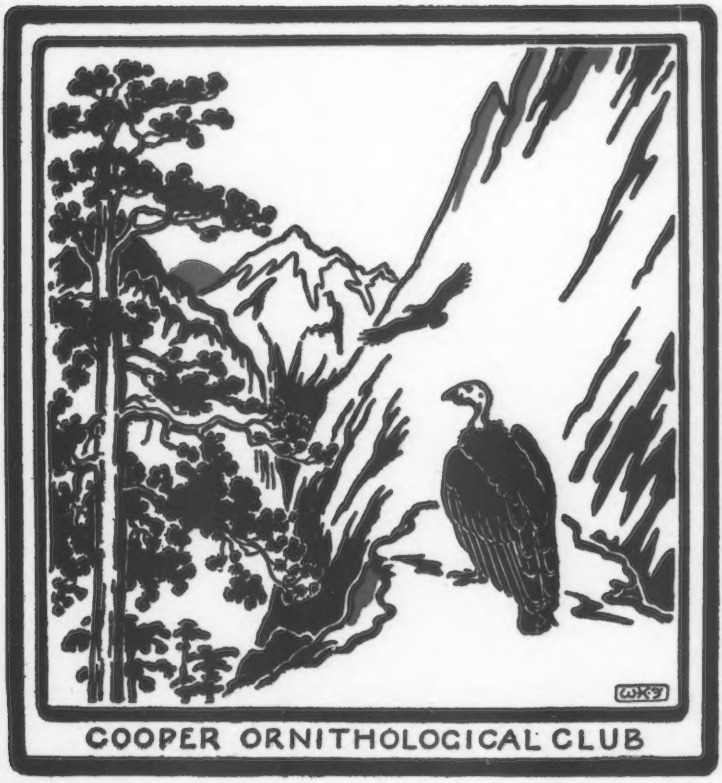
THE CONDOR

A Magazine of Western Ornithology

Volume XXIX March-April, 1927 Number 2



COOPER ORNITHOLOGICAL CLUB

THE CONDOR

A Magazine of Western Ornithology

Published Bi-monthly by the Cooper Ornithological Club

Entered as second-class matter May 15, 1925, at the post-office at Berkeley, California, under Act of Congress of February 28, 1925, Section 412, paragraph 4.

Issued from the Office of THE CONDOR, Museum of Vertebrate Zoology, Berkeley, California.

SUBSCRIPTION RATES

Three Dollars per Year in the United States, payable in advance.
Fifty Cents the single copy.
Three Dollars and Twenty-five Cents per Year in all other countries in the International Postal Union.

COOPER ORNITHOLOGICAL CLUB

Dues are payable in advance on January first for the calendar year: Three Dollars per year for members residing in the United States; Three Dollars and Twenty-five Cents in all other countries. Members whose dues are paid receive THE CONDOR without additional charge.

Send manuscripts for publication to the Editor, J. GRINNELL, Museum of Vertebrate Zoology, University of California, Berkeley, or to the Associate Editor, H. S. SWARTH, California Academy of Sciences, San Francisco.

Send dues, subscriptions, orders for back numbers of THE CONDOR and for the PACIFIC COAST AVIFAUNA series to the Business Managers, W. LEE CHAMBERS, Box 123, Eagle Rock, California, or HARRY HARRIS, Box 123, Eagle Rock, California.

Endowment Secretary, D. R. DICKEY, 514 Lester Avenue, Pasadena, California.

Issued March 15, 1927

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VOLUME XXIX | MARCH-APRIL, 1927 | NUMBER 2

BLACK SWIFTS NESTING IN YOSEMITE NATIONAL PARK

WITH FIVE ILLUSTRATIONS

By CHARLES W. MICHAEL

FOR a number of years I have had a strong suspicion that Black Swifts (*Cypseloides niger borealis*) were nesting somewhere in the vicinity of Yosemite Valley. Each year I became better acquainted with these birds, but it was not until July 6, 1926, that a nest was actually discovered. On the date of discovery I happened to be exploring in the rugged canyon of the Tenaya, and after the discovery of the nest I made it my business to visit weekly with the swifts for the next seven weeks. In the following article an attempt is made to place on record the results of my observations.

In the inner chasm of the Tenaya Gorge a hundred paces beyond the "wedged boulder", where vertical walls rise two hundred feet or more, the swifts had chosen a nesting site. The nest was placed on a bit of projecting rock which presented a level space of perhaps four by six inches. The projection was located within the shelter of an overhung wall, thirty feet directly above a deep pool in the creek. Towering above the nest the cliff rose sheer for a distance close to two hundred feet. The inner chasm is here very narrow; the vertical walls stand not fifty feet apart. The channel is dark and cool; in the long summer days the sun lights its depth for but a brief hour. And at no time or season does the sun ever play on the nest of the swifts—cramped quarters, I should say, for birds of the wide skies.

It was the wild, erratic wingings of a lone Black Swift, as he whizzed back and forth through this narrow flight lane, that first attracted my attention. Such bewildering speed; such coördination of mind and muscle: I stood there fascinated, trying to follow the flight of the wild winged thing. Somehow the thought came to me of a great winged spider suddenly gone mad. While I watched, the bird suddenly swooped and fairly seemed to plaster himself to the wall not fifty feet from where I stood. Then, with fluttering wings the bird moved upward—not straight upward, however, but in an angling course across the face of the cliff. As I followed the movements of the swift the nest was suddenly descried. The swift paused, clinging to the projection that held the nest, and I thought at first that he was feeding young. After a moment he scurried on upward a few feet, fell backward, and then twinkling wings carried him away down the channel.

By scrambling to the top of a great boulder that was lodged in the stream bottom, I was able to approach within thirty feet of the nest. Then I realized that it was not young the swift was feeding, for there on the nest sat a full-grown bird. While I watched, she, too, left the nest and flew down the canyon. I was some twenty feet below the nest and could see neither young nor eggs. I had neither binoculars nor wings and so the contents of the nest must, for the present at least, remain a mystery.

As for the nest itself, as best I could see it, it resembled in form and construction that of the Western Wood Pewee; but in size it appeared larger. Also it reminded me of certain cormorant nests I have seen plastered to the ledges above the sea. The general appearance of the structure, its apparent adhesion to the shelf, and the droppings plastered to the granite immediately below, led me to suspect that the nest may have been occupied through several nesting seasons. The rock wall roundabout was absolutely bare, and dry. There was not a growing plant within ten feet of it. Not once during my visit with the nesting swifts did the birds utter an audible sound. Violet-green Swallows sailed through and above the chasm, but no swifts excepting the nesting pair were seen.

Fig. 34. BLACK SWIFT. FOR HOURS AT A TIME THE OLD BIRD WOULD CROUCH LOW ON THE NEST.

As is befitting the mysterious Black Swifts, the nest site chosen was in one of the most inaccessible sections of a gorge as grand as any in all the Sierra. I feel safe in saying that not ten human beings have ever passed between the sheltering walls that protect the home site of the nesting swifts. On the morning of July 11, I set out to again visit the home of the Black Swifts. Starting from Mirror Lake at 6:30, the first hour was over a good trail; but leaving Snow Creek there followed two strenuous hours before I had climbed through the inner chasm to the nest site. Beyond the "wedged boulder" I moved cautiously, but before I had come within sight of the nest a swift was seen to leave the wall and dash down the canyon. I was afraid that I was not to find the swift at home, but as I came opposite the site, there was the bird in plain sight. She sat on the nest with her tail appressed against the wall and with one long wing drooping over the side. Her body rested in a horizontal position and she appeared much too large for the nest.

While I was watching the bird a second nest was discovered. This second one was tucked away in a niche and, but for the droppings below, it would hardly have been noticed. The nest was a little round cup, shallow, and composed, apparently, of some soft, brown material like dry leaves; the rim was tinted slightly green. On a later visit, with assistance and encouragement from "Big" Con Burns, I managed to climb to a point within eight feet of the nest. And then it was learned that the nest was composed of the delicate pinnae of the five-fingered fern. Great banks of these ferns hung from neighboring walls, and it would be quite possible for the swifts to procure material while on the wing. Perhaps, though, the swifts may gather nesting material while clinging to a wall, as I have often seen swifts alight on a ferny ledge above Vernal Fall. In any event, this nest was rimmed with fresh green leaves.

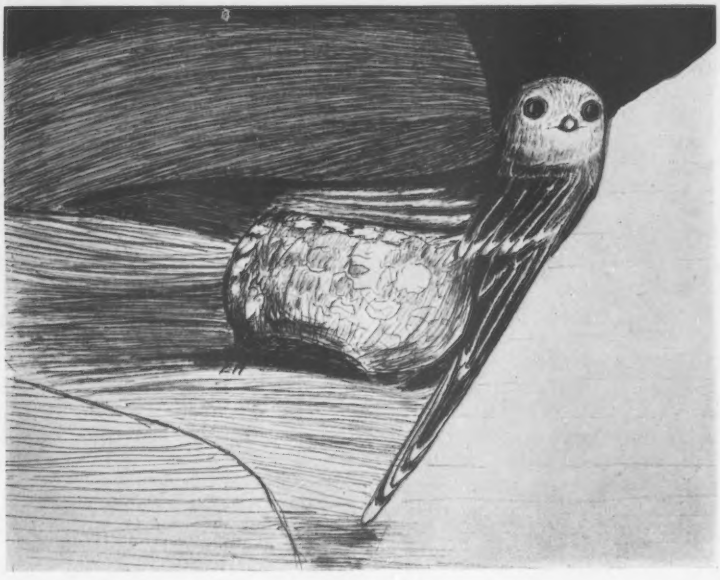

Fig. 35. THE OLD SWIFT APPEARED MUCH TOO LARGE FOR THE NEST, AND OFTEN WHEN INCUBATING THE EGGS ONE WING HUNG LOOSELY DOWN.

Just one hour after my arrival at the site, a swift came up the canyon and dived into the second nest. These two nests were not more than three feet apart, and yet the birds seemed not to pay the least attention to one another. Each bird stuck silently to her duties; in fact for hours the birds did nothing more exciting than to yawn or stretch their wings. Occasionally one of the birds would reach down with her bill and make a movement as though she might be adjusting the eggs beneath her breast.

As nothing happened, or seemed likely to happen, I moved up closer. The bird that sat in plain sight was not the least afraid. I sat down within twenty feet of her and I could plainly see her large, round, black eyes. The feathers immediately around the eyes were hoary, giving the effect of an uncertain eye-ring. Occasionally as she lifted her wing I could get a flash of white on the under side.

In all the four hours I watched, this bird did not budge from the nest. She was so confiding that I had not the heart to drive her from her home; and besides, I wanted to be friends with her that I might be welcome when she began to feed the young. When I got up to leave, the bird in the upper niche again left the nest and flew down the canyon.

On the morning of July 18, Mrs. Michael and I guided three students of the Field Nature School up the Tenaya Canyon. As we were nearing the home of the Black Swifts we saw one of these birds fly down the canyon. We arrived at the nest at 11:15 A. M. There was no old bird in the nest which was most exposed to view, but in the nest that was tucked away in the dark niche we thought we could see a bird crouched low. After waiting fifteen minutes we again saw a bird sail down the canyon. Looking with the binoculars, Mr. Harwell thought he could see the heads of two birds in the more exposed nest. Mrs. Michael and I were inclined to agree, but after looking carefully we could not be sure. Dark little birds in a dark nest: none of us could be sure; we must have more evidence.

After waiting one hour and fifteen minutes, one of the old birds returned and flew directly to the nest. She did not feed the young, but hovered them, sitting in what appeared to be a very awkward position. She sat well forward, with her lower belly resting in the cup of the nest and with her throat and breast resting against the upright rock surface that formed one of the walls of the niche in which the nest was placed. One of her long wings hung limply down in front of the nest. The other wing was crowded against the wall, and the tip could be seen extending beyond her tail. She sat in this position for an hour. And then a breeze appeared to catch her loose wing and swing her about. Now with her back to us she clung to the rock and gazed into the nest for fifteen minutes. While in this position, several times we saw a little head pop up; but only one head. Creeping back onto the nest she reversed her position and now sat looking up the canyon instead of down.

As the time passed, we moved closer and closer to the bird and for the last hour we sat within twenty-five feet of her. Not once in all this time did the swifts utter an audible sound. By standing on top of the wedged boulder we were just on a level with the nest. Mr. Harwell suggested that we gather boulders and build up a bench that would raise us a couple of feet higher; and then before going we were to flush the bird and try to ascertain the number of young. We built the bench. The swift did not appear to mind our working only twenty-five feet from the nest, and when we were ready to flush her she would not flush. I was able to climb the rock wall to a point within eight feet of the sitting bird and slightly below the nest. Still she would not leave. I tossed a little pebble against the cliff close to the nest. She still held her position; but when a second pebble was tossed, she left the nest and flew down the canyon.

With the old bird gone, each of us in turn climbed onto the pedestal to have a look through the glasses. All were in agreement that there might be more than one young bird, but not one of us could be sure. However, we knew that there was one young bird in the nest and that it was fuzzy and dark.

As we watched the old bird while she sat in different positions on the nest we were surprised to find that she showed so much light color. Especially was there much light color to be seen along her side when she drooped a wing. When I hung to the cliff within eight feet of her it was noted that the whole head and neck was dusted with silver. The individual feathers appeared silver-tipped, and as she moved her head there was a slight change of color.

During our stay there was no action about the second nest, but I am sure that at times the bird on it crept forward to look down upon us.

July 25, while on our weekly pilgrimage up the Tenaya Canyon to visit with the swifts, we met three of these birds a mile below the inner chasm flying swiftly down the canyon. As they moved overhead we caught the sound of their voices in a low melodious rolling twitter. As a rule, I should say that the Black Swifts are silent birds. During the mating season we have heard their sweet swallow-like chatter occasionally, but never before, I think, did we hear these rich conversational notes.

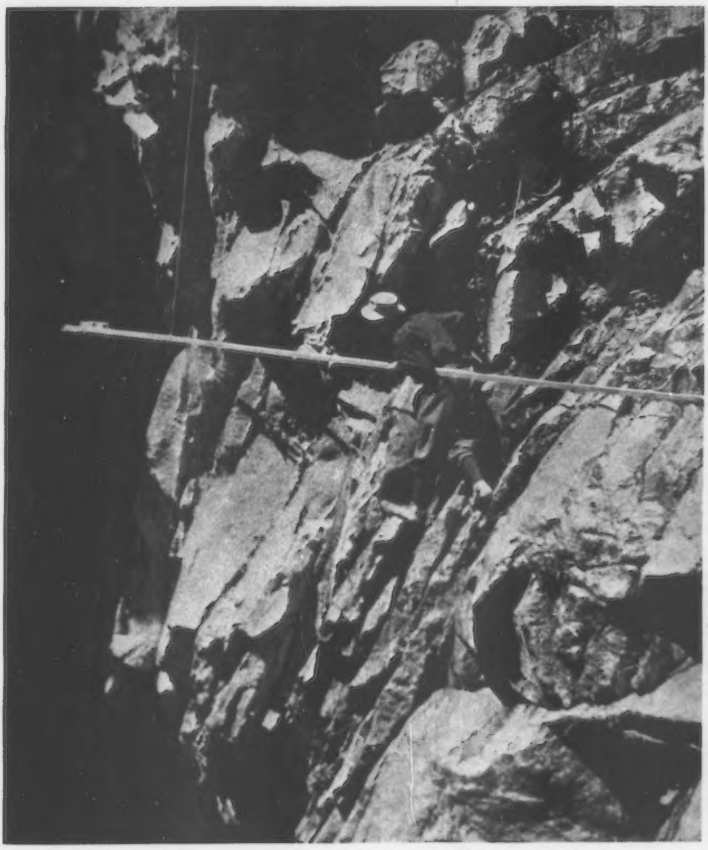

Fig. 36. I, CLINGING TO THE CLIFF AT A POINT NEARLY LEVEL WITH THE NEST, WAS ABLE TO SWING THE KODAK INTO POSITION.

Utterly different are these notes from the high-pitched, hysterical chatter of the White-throated Swifts.

We arrived at the swift's nest at 9:30. Nothing was seen of the old birds. A young bird was squirming about in one of the nests. It was a dark little object and in its dark niche it was not possible to gain any positive knowledge of its appearance or of its behavior. Just before twelve o'clock an old bird flew up the canyon and

came toward the nest, but instead of feeding the young bird she dived into a dark niche and disclosed a nest that had not been previously seen. This makes three nests within a radius of three feet.

These nesting swifts are bold birds. With my kodak on a long pole I worked within a few feet of the nest, and the bird back in the dark niche did not leave. Four and a half hours were spent with the swifts today, and not once during this time did the nestlings receive food. Not once was a single audible sound uttered. All I learned today about nesting swifts was that they are silent birds and that the young can go long hours without food.

August 1, five and a half hours were spent with the swifts and very little was learned about them. When I arrived at 8:50 A. M. the old birds were gone and the dark little young were snuggled away in their dark niches. At twelve noon one of the old birds came up the canyon, came to perch at the most exposed nest, clung fluttering to the rim of the nest for a moment, and then departed apparently without feeding her young. During the next two hours and a half that I remained on watch nothing happened. The young were too small to be entertaining and the old birds made no visits to their nests. Strange birds are the Black Swifts. Most young birds receive food every few minutes, but here we find young birds that go for hours without food. Raking the skies all day long, the old swifts probably return in the evening to pump their young full of concentrated nourishment.

My next visit to the swifts' nests was on August 9. I arrived at 9:30 A. M., and I stayed four hours. Nothing was seen of the old birds. A young bird could be seen in each of the more exposed nests. They appeared to be about half-grown. Two hours after I arrived, one of the young birds changed his position slightly. Save on this one occasion there was no activity in the nests, and during the length of my stay the birds remained snuggled down obscurely. Still, I could not be sure; there might be more than one young to each brood. A fourth nest was discovered today. It was on the opposite canyon wall a hundred feet up the sheer cliff, neatly tucked away in a well sheltered niche. No bird could be seen in this nest.

On August 15 I arrived at the home of the swifts at 7:15 A. M. On this morning I had started for the nesting site before daylight, hoping to arrive before the old birds had departed for the day; but evidently Black Swifts are among those birds that go out for the early worm—I arrived too late.

The young swift in the more exposed nest appeared but slightly larger than when seen eight days before; but when examined through the glasses it was noted that the wings were much longer and there appeared more white about the eyes and forehead. This bird was at rest on the nest in a horizontal position, with wings pressed close to the body. The second nest was occupied by what appeared to be a larger bird. And this second bird was more active, changing his position now and then. When in certain positions his long wings extended three or four inches beyond the rim of the nest.

A Canyon Wren that came to the pool below to bathe moved back up the wall, passing between the two nests; although within a foot of the nests her presence did not in the least disturb, or even interest, the young swifts.

At 8:15 the bird in the lower nest appeared to awaken. He squirmed about and repeatedly opened his mouth and blinked his eyes. I hoped that this was an indication of the approaching lunch hour, but nothing more happened until 9:20, when the young bird raised himself, stretched his wings a bit and once more settled down for another nap.

Once more during the morning the young bird became active; this time preening his long wing feathers and turning completely about in the nest. When again settled,

a spotlight reflected from a pocket mirror failed to move him. At 12:30 an old bird arrived. She flew up the canyon and alighted directly on the edge of the nest. Clinging here with her tail appressed and one long wing spread out across the surface of the wall she apparently pumped food into the young bird. She appeared to fairly stuff the young one, pumping food into him ten times in twenty seconds with but slight pauses between times. At first the young one was very eager and squirmed with delight while being fed. Soon, however, he was full and had to be coaxed to take the last two or three helpings.

Fig. 37. PHOTOGRAPH TAKEN AUGUST 15, WHEN THE YOUNG BLACK SWIFT WAS FOUR WEEKS OLD.

When through feeding her young one, the mother bird crawled up onto the nest and the young one squirmed and twisted until his head was quite snuggled under his mother's breast. Not an audible sound was uttered during the meal, but just before the parent bird departed she uttered two sharp, squeal-like notes; and then three more as she tumbled backward into space to speed off down the canyon. The young bird stretched and preened and once more settled down.

August 22 found Mrs. Michael and me again at the swifts' nests. We could not hope to learn much of anything new, but we did hope to get a better photograph of the young bird and the nest. As usual the old birds were away for the day. The two

young birds that we could see, one in each nest, appeared almost full grown. Four hours we watched one of these birds, and during this time he was only active for a few minutes, when nature called upon him to shift about in the nest. The excrement fell free of the nest and dropped thirty feet to strike on a boulder that stood above the surface of the pool. In ordinary seasons the droppings would fall directly into the stream and float away, leaving no clew to the nest; but this has been a very dry season and the water is low.

Fig. 38. PHOTOGRAPH TAKEN AUGUST 22, 1926, WHEN THE YOUNG BLACK SWIFT WAS FIVE WEEKS OLD.

The young swift is now much larger than the nest; both head and wings extend beyond the rim. We feel that the young swifts will surely leave their homes in a day or two, and so feeling, the trip today shall be the last trip up the Tenaya Canyon this season. And now, thanks to Mrs. Michael who was my companion on many of the weekly trips. She greatly aided me in my attempts to photograph the birds, and also I have her to thank for a number of pen sketches drawn from life, two of them accompanying this article.

Now that I know something of the nesting habits of the Black Swift, it no longer seems strange to me that their nests were not more often found. To me, everything connected with the lives of Black Swifts tends to hold the secret of their nesting activities. In this regard it may be noted: Black Swifts are silent birds. They nest on inaccessible cliffs in isolated sections. They have flying ability which enables them

to forage far from their nests. The young birds can, and do, go long hours without food. The old swifts are not easily flushed from their nests. If forced to depart, they leave the neighborhood silently and without protest. And I believe that the female takes upon herself all the duties of incubation and of the feeding of the young. With only one parent bird visiting the nest, there is less than half the chance of being observed.

Luck it may have been that led to the finding of the first nest; and luck it may have been that subsequently disclosed six others; but, be that as it may, I now feel that I have the system for locating Black Swifts' nests. Knowing the precise requirements demanded by a nesting swift, the thing to do is to find the locality that approximates these requirements. Pay no attention to the Black Swifts themselves, for they will not lead you to the nest, but search out the nesting site that would suit a Black Swift and there you will likely find the prize. What really simplifies the problem is the scarcity of suitable nesting localities for Black Swifts. There must be cozy niches in which to place the nests, and these niches must be so situated as to afford complete protection against rain, wind, and sunshine. Perhaps, too, there should be many of these niches, that nesting swifts may have nesting neighbors.

Seven visits were made to the home of the swifts. On six of these visits I tried to photograph the nest and the bird. The first four times I registered complete failure. A kodak on the end of a twenty-foot pole is a hard thing to handle; this I learned by experience. On the occasion of my sixth visit, a scheme evolved whereby the twenty-foot pole could be manipulated without danger to the attached kodak and at the same time could be so controlled as to offer a fair chance of making a successful time exposure. It was a simple scheme. A frame at one end of the pole held the kodak. A thread running down the pole from the kodak could be pulled to set off the shutter. A stout cord tied to the pole about five feet from the kodak enabled Mrs. Michael from her position on a ledge above, and to one side of, the nest to lower the whole apparatus. I, clinging to the cliff at a point nearly level with the nest, was able to swing the kodak into position, and by wedging the end of the pole into a crevice it was possible to hold the kodak steady. The kodak, however, pointed toward the nest at an angle, and from my position, twelve feet away, it was difficult to judge the correct angle. But, by making several exposures, I did manage to hit it.

The light was poor. I was not satisfied with the pictures taken on the occasion of my sixth visit. On the seventh I drove a spike into a crevice on the ledge where Mrs. Michael had perched to lower the kodak. Lowering the pole and the kodak to the correct position the cord was tied to the spike. This plan left Mrs. Michael free to help in another way. She, standing in the sunshine fifty feet from the nest, reflected light from a hand mirror directly into the dark niche that held the nest. One-second exposure in this light brought good results, as may be judged by the accompanying photograph showing the nearly full-grown bird.

Yosemite, California, October 14, 1926.

BANDING OF GAMBEL SPARROWS IN THE FALL OF 1926[1]

By JOSEPH MAILLIARD

THE EXPERIENCES of the writer during banding operations upon the genus *Zonotrichia* in the fall of 1925 in Modoc County, California, made it seem worth while to return to the same ground the following year at the same season, in order to find out if this sparrow individually migrates along a fixed route. As mentioned in a previous article (Condor, XXVIII, 1926, p. 70) the season of 1923-24 had been one of great drought in northern California, and in the fall of 1924 the number of Gambel Sparrows (*Zonotrichia leucophrys gambelii*) found in Surprise Valley was actually astonishing. So great were their numbers that there was afforded a magnificent opportunity for mass banding by any one properly equipped for such work, with the idea of some of them possibly being checked up elsewhere on the line of migration north or south. With this object in view, Eagleville, Modoc County, California, was visited by the writer in the fall of 1925, this time with full banding equipment.

The rainfall that season had been nearly normal, and food and water were plentiful. This condition had the effect of reducing greatly the number of sparrows present, the inference being that this year there were numerous routes of migration along which food and water were obtainable. In 1924, the date of arrival was prior to September 3 (the date of arrival of the Academy party), but in 1925 none was noted until September 12, and not enough to warrant banding were on the ground until ten days later. The greatest number was banded on October 5, after which, with stormy weather, the numbers rapidly diminished. In all, 381 birds were banded during the 1925 operations.

To investigate this matter still further, another visit was made to Eagleville in the fall of 1926, the ground being reached September 1. Like 1924, this was a dry year, but some spring rains had benefited the country appreciably, so that there was more or less food for sparrows, in the way of grass and weed seeds. The first sparrows were noted September 2, when half a dozen were seen by the roadside. After this the numbers increased so rapidly that banding was commenced on September 7. The first station was at the McCully ranch (Station A), two miles north of Eagleville, in a small potato patch, bordered on three sides by a heavy hedge of wild rose bushes, in which banding operations had been carried on in 1925.

Ten two-compartment Potter-type traps were used, and one funnel-door trap of the Sprot type, the latter not proving so successful as in the previous year, for some unknown reason. On the afternoon of September 6 the traps were arranged and baited, with the doors propped open, about 15 yards apart under the edge of the rose-bush hedge on two sides of the patch. The third rose-bordered side had not proved profitable in the previous year, although no apparent reason for this unpopularity presented itself. There was much "pigweed" (*Amaranthus*) in this patch, the seeds of which the birds at first preferred to the cracked grain offered to them; but gradually a bait appetite developed. So many Gambel Sparrows came into a vegetable garden about 200 yards away, in which there was a veritable thicket of raspberry bushes, that four traps were moved over to it; but the quantity of food there was so great that the move proved to be a poor one, especially when a stray family of chickens and a good-sized flock of quail took up its abode in the garden, in which the season's usefulness was about over.

[1] Contribution from the Museum of the California Academy of Sciences.

On the first day of trapping at this station, only 23 birds were taken, but one of them was an immature White-crowned Sparrow (*Zonotrichia leucophrys leucophrys*), which was given a number. This bird came into the traps once each day on September 7, 8, 9, 10 and 17, and four times on the 18th. Incidentally, the traps were moved to Station B from September 10 to 16, but returned to Station A early on the 17th, which may account for this bird not making a straight record of repeats. On September 8 and 9 the numbers banded at Station A were, respectively, 42 and 47, on the former day there being taken another White-crowned Sparrow which repeated several times in the next three days. As birds of this species only came into the traps occasionally, the chance of the few that were taken being picked up elsewhere seemed so remote that no more were banded.

As no "returns" were coming in at Station A, the traps were moved before midday of September 10 to the Minto ranch (Station B) and placed along the lane described in the *Condor* article above mentioned. Unfortunately, the ditch that ran through here was temporarily empty and not many sparrows were visiting the lane, although there were plenty of them in the vegetable garden and orchard a hundred yards away—where 50 chickens and a cartload of cats made trapping an impossibility. However, water was turned back into the ditch in two or three days, and the sparrows then increased in numbers. A migratory wave evidently came in on the night of September 13, but very few of the birds seemed to be hungry for the bait offered to them. Yet 38 were banded on that day, and 50 and 51, respectively, in the next two days.

On September 15 the first return was taken, number 169771, originally banded at the same station October 2, 1925. On September 16 the day's result was 52 banded and 57 repeats, the latter figure showing that a large proportion of this particular flight had by this time been banded. On account of this condition of affairs, the traps were moved September 17 back to Station A, where hundreds of the sparrows were feeding, and before night 87 more were wearing bands. During the ensuing night, however, a good many of the birds must have moved on south, for only 48 were banded the next day. Among the visitors to the traps that day was another return, number 169915, first banded October 9, 1925.

As the party's car had to be used for a few days for distant work, the traps were again moved from Station A, on the evening of September 19, this time to a place close to town, the feeding corrals on the Finmand ranch being selected for Station C. So far this fall, the corrals had not been used, and they were largely covered with a heavy growth of seeding thistles. The combination here of a small stream, good cover in the willows on its banks, and the thistle seed had attracted a large number of the sparrows. At first the birds paid no attention to the bait strewn to attract them, but gradually they commenced to pick it up and on September 20 the day's operations netted 80 banded. The next day showed the high tide mark of the season and certainly was a busy one, with 112 sparrows banded and 26 repeats, making a total of 138 captured.

Such rapid work as this had not been anticipated, and by this time there remained only 85 of the bands of proper size that had been brought along. Others had been ordered from the Biological Survey but had not yet arrived, and, as no returns had been found among the sparrows taken at this station, where no banding had been done previously, it seemed advisable to take the traps back to Station B and there try again for returns from 1925. This was done on the evening of September 22, but the supply of bands did not last much over one day. One more return was taken, however, on September 23, its number being 169702, first banded October 1, 1925.

The bands that had been ordered did not arrive until October 2, by which time the number of Gambel Sparrows present had greatly diminished. In fact, at Station C, where there had been hundreds but a few days before, practically none were now to be found. As but few remained in the Minto lane (Station B) the traps again were set at Station A, early in the afternoon of October 2, and 46 birds were taken by nightfall. The numbers of sparrows diminished so rapidly after this that the work was stopped October 6, when there were too few remaining to make it profitable to continue. Another return, number 169989, was taken October 3, originally banded October 9, 1925.

The results of this year's banding work at Eagleville were: Gambel Sparrow, adults banded, 649; immatures, 292; White-crowned Sparrow, immature, 2; total, 943. In addition to this, there were 291 repeats and 4 returns, bringing the total number up to 1236 captured in not quite 22 days of actual work. The age percentages of this lot were: adults, 69; immatures, 31. In the previous year these percentages were 52 and 48; but exactly what this indicates it is hard to say, unless it is that fewer young were raised in the year of partial drought.

As some readers of this report *may* come across one, or more, of these banded birds, the list of numbers used during this work in Modoc County is given herewith: 153201-153300; 171176-171200; 181601-181700; 351201-351500; 470701-470817; A19401-A19500; 38261A-38460A. All of this lot of bands are on Gambel Sparrows except numbers 171187 and 171199, which were put upon White-crowned Sparrows.

It is more than probable that the southern route of these sparrows lies entirely east of the Sierra Nevada, which appears to offer but small chance of any of them being picked up by bird banders. Yet some of them may return by a more westerly route, or, another year, may accompany from the northern nesting grounds other birds of this species that are accustomed to migrating along the western side of the Sierras, where there are enough people interested in bird banding to make capture a little more probable.

NOTE.—Since the above article was written a report has been received from Mr. F. C. Lincoln, of the U. S. Biological Survey, that Gambel Sparrow number 169732 was captured on January 15, 1927, at Lemon Grove, San Diego County, California, by Randolph Morse. It was caught in a chicken house and again released.

San Francisco, California, December 6, 1926.

EXPERIENCES WITH CARDINALS AT A FEEDING STATION IN OKLAHOMA

By MARGARET MORSE NICE

ON OUR RETURN to Norman in September, 1925, after a year's absence, we found on our grounds a family of *Cardinalis cardinalis cardinalis* consisting of two dilapidated looking parents and a devoted son with a full length tail but with a mixture of brown and red on his back and a light brown space on his chin. We first saw these birds on the 13th; on the 17th I watched the mother and son from the house; he begged *zee-zee zee-zee zee-zee,* then flew to a nearby bush and picked a leaf which he dropped. Mother found a green caterpillar, began to flutter her wings, giving almost the same call as the young bird had given; she then flew to him, gave him the food and left. He descended to the ground, pounded the caterpillar somewhat and ate it leisurely. Soon he found an insect for himself. Two days later I saw him experiment on a piece of string, a dead leaf and a green leaf, picking them up and dropping them. He got a small caterpillar and ate a little crust of bread, but still his begging note was continually heard.

A cold rain on September 23 brought Mother Cardinal to the feeding shelf just outside our living-room window; she ate some seeds and cheese and then flew three times with cheese for her offspring perched in the bushes and incessantly calling. Near noon they both came to the shelf; Mother took a piece of cheese, Son begged, and she fed him a little piece. Then she went to the other end of the shelf and soon flew away. The young Cardinal ate a piece of bread and then started in on the bird seeds, cracking and swallowing and cracking and swallowing; finally he flew to a black elder bush and began to eat berries. All at once he must have remembered that he was still a baby for he gave his begging note.

Later in the afternoon Mother came again and started to eat; she picked up a small piece of cheese and called her child, who appeared at once, vibrating his wings and tail, bill wide open, the picture of eagerness; she daintily bestowed a tiny morsel upon him and then turned her back. He stood expectantly, begging for more, but as she remained indifferent, he looked about and helped himself to an *immense* piece of cheese.

The next day he teased in the bushes and was fed cheese by his mother. On September 25, they came separately several times; Son now gave gentle peeps. A Catbird visited the shelf enjoying the cheese, but the young Cardinal unkindly drove him off. The only time that Mother and Son were seen together, she depressed her crest, opened her bill and drove him away! This was the last we saw of her for more than two weeks.

The young Cardinal now attached himself to his father, teasing with apparent success until the 30th, after which date this parent also went into retirement; thus he was partially fed by the adults for at least 17 days after he was full grown. He then became the most faithful of patrons at the feeding shelf. On October 2 I heard the oddest song—such queer and squeaky notes—unlike any bird song with which I was acquainted; it came from the young Cardinal. After the concert he picked a leaf and dropped it to the ground. (On September 28 I had heard a strange Cardinal song while on a walk, but had not obtained a good view of the singer; it was a whisper song and, although beginning in ordinary Cardinal fashion, ended with strange low growling notes; the bird flew into thick cover giving the characteristic *peet* of the species.)

By October 5, the young Cardinal's feathers were all red, but his bill was still horn colored. Five days later, Father and Mother reappeared at the shelf in resplendant new plumage—a great contrast to the worn and tousled feathers of a short time before; Mother had been absent 16 days and Father 11. (In 1920 the Cardinals disappeared from our grounds from October 4 to 17, and from a 40-acre tract of land of which I was making a special study they were absent from September 30 to October 16; in 1922, three were recorded on this tract on September 26, none was seen October 1 and 7, but two had returned October 11.) The young bird who had come for food many times a day from September 23 to October 9 was not seen until the 15th; on that date he tried the suet and took big nips of it, the only Cardinal I have ever observed doing so. He came several times on October 18, but that was the last time we saw him.

Father and Mother came separately to the shelf nearly every day until early December, when Mother disappeared. Father soon proved to be a tyrant; he tolerated no commoners at his feast, and consequently was kept busy dashing from one end of the shelf to the other to teach those impudent English Sparrows their place. For a week in December a Robin came often for water and raisins; although the epitome of dignity and never molesting any other bird—at one time five English Sparrows were eating beside him—the Cardinal regarded him with awe and hurried away whenever this stately bird alighted on the shelf.

The Cardinal grew more pugnacious than ever; I would hear his *ya* of anger time and again as he drove off the tiny Plumbeous Chickadees and English Sparrows; he would even dart at them from the bushes. Once an immature Harris Sparrow appeared, the Cardinal pounced on his head and effectually discouraged him from returning. His animosity toward this species soon became a disaster, for on January 8, during a snow storm, a handsome Black-hood appeared with *a band on his left leg.* This must have been no. 65948 whom I had banded nearly two years before—March 19, 1924. Of course my chief ambition was to trap this famous traveller; but here the Cardinal was the greatest obstacle, for he drove away my poor Harris Sparrow most unmercifully. Perhaps he was venting his spleen on the innocent bystanders because his favorite sunflower seeds were all in the trap next the shelf; his hiss of anger became a snarl. The nimble Chickadees evaded him, but poor *Zonotrichia querula* got no chance to eat and but little to rest.

The next day an English Sparrow was in the trap, the Cardinal alighted on top and peered down at the captive; she jumped up and pecked the lordly creature's foot. He leaped up with a *ya* of astonishment and rage, and took refuge on the shelf, cuddling his insulted foot in his brilliant feathers. On January 11 he was reaching into the trap, getting sunflower seeds without being caught, but finally he became less cautious and down he went. He gave two blue-jay-like screeches when I took him in my hand to band him, but he did not try to peck. I did not see him at the shelf again until January 25, when he was as disagreeable as ever; after this he left our vicinity. On June 1 it was with a thrill of pleasure that I met Father Cardinal once more in his new headquarters by a creek a mile southwest of our grounds; he wore a band and no one but myself bands birds in this region. I rejoice that he has taken up his abode so far away.

On February 20, 1926, a new male Cardinal without a band arrived; he has proved the greatest contrast to his predecessor, for only once have I seen him drive off an English Sparrow; at all other times peace has reigned, even Harris Sparrows not being molested. On March 3, a female Cardinal appeared in the bushes; but not until March 14 did I see the two together at the shelf. Then, instead of driving her

away as I had expected, he courteously presented her with a husked sunflower seed—the earliest date at which I have seen this pretty ceremony. Sometimes he fed her a whole sunflower seed and sometimes only a small morsel of food; once he fluttered his wings just before their bills touched.

During each of the three previous seasons (from 1921 to 1924) our feeding station has been patronized by a pair of Cardinals, although two winters the female did not appear until the middle of February. In each case we believed the male was a different one, partly because of behavior in regard to drinking water (the first male having been a very thirsty bird and the others just the opposite), and also because of the contrasts in their characters, the first having been of a pleasant disposition, the second pugnacious, and the third unusually amiable. The first was not noticed to drive away smaller birds until a day in late February when falling snow covered the provisions; however, he did not tolerate the presence of his future mate until late March. The second male was a decidedly bellicose bird, showing special animosity against Harris Sparrows and also against the female Cardinal during February. The third male, on the contrary, although occasionally threatening Harris Sparrows, never treated the female unkindly; his unusual meekness of character was shown by the outcome of a battle in late April with a male English Sparrow; the gorgeous creature spread out his tail, lowered his crest and opened his bill, but, alas, he was bluffed by the little foreigner and retreated! All three of these males were afraid of Mockingbirds; two with good reason, for both a male and female *Mimus polyglottos* evinced a particular zeal in driving off Cardinals; but the third bird (whom we considered a female because she never sang) never threatened the other visitors at the shelf.

The female Cardinals seem to have sweeter dispositions than most of the males; only two have been seen to drive away other birds (English and Field sparrows), one on two occasions and the other once. Both of these were heard to sing. Two females were trapped and banded, one in January, 1923, and the other in March, 1924; the first was never seen after May 4, 1923, but the second came with her mate to the shelf every day until May 27, 1924, when someone shot her about a quarter mile to the west of our grounds.

The Cardinals have eaten canary bird seed, millet, kaffir corn, bread, cheese, nut meats, black elder-berries, and sunflower seeds. In eating these last (as well as bird seed) the Cardinal manipulates each seed with his tongue until it stands edgewise between his mandibles; he then cracks the seed and by means of his tongue ejects the two pieces of husk and swallows the kernel. Much this same method is followed by Harris and English sparrows, although they crack the seeds as they lie flat in their bills. A Blue Jay that came one winter swallowed sunflower seeds whole. The Chickadee takes a seed to a bush, holds it with both feet, hammers the shell open with its beak and then eats the kernel piece-meal.

When they come to the shelf, the male Cardinals often give a loud peep; the females do this less often. The Chickadees almost always announce their coming with a cheery little peep, while the other native birds are silent. Cardinals sing occasionally from August through January, but their season of full song begins in early February and extends into late July.

It must be confessed that some of the male Cardinals in their winter behavior have shown unamiable traits. Nevertheless they are among the best loved of our guests; they give a touch of brilliant color and a spice of excitement to our bird shelf; they rejoice us with their flaming beauty and their splendid song.

Norman, Oklahoma, April 2, 1926.

THREE NOTABLE NESTING COLONIES OF THE CLIFF SWALLOW IN CALIFORNIA[1]

WITH THREE ILLUSTRATIONS

By TRACY I. STORER

THE AMERICAN Cliff Swallow (*Petrochelidon albifrons albifrons*) is so common and ubiquitous a member of the lowland and foothill avifauna in California as scarcely to arouse more than passing interest, even from the amateur bird student. Originally the Cliff Swallow nested upon rocks (as its generic name indicates), but the species has largely changed its habits with the advent of human occupancy of the country and builds now mostly upon barns and similar buildings with sheltering eaves. Indeed, so extensively has the bird changed its habits that beginning students are often confused by the appellations "cliff swallow" and "barn swallow" as applied to *Petrochelidon* and *Hirundo*, and more than once it has been suggested that these two swallows should be designated respectively as "barn swallow" and "bridge swallow", better to indicate their present-day ecologic tendencies. With this shift in its customary nesting site, our "cliff swallow" has profited greatly as a species. Nesting supports are available in many plains localities which formerly lacked such facilities and this has actually increased the local area which the species occupies. Agricultural development also may possibly have augmented the potential food supply for swallows, although this feature is less capable of satisfactory demonstration than the preceding.

During the summer of 1925 three unusual nesting colonies of the Cliff Swallow in "natural" locations came to the writer's attention. One of these was notable by reason of its large size, the other two because of the high altitudes at which they were situated.

In the bed of Putah Creek, on the Yolo-Solano County boundary, about three miles southwest of the town of Winters, there stand several irregularly rounded masses of basaltic rock. These rocks, by reason of artificial damming of the creek, are practically surrounded by water throughout the year. In winter the rocks are washed and occasionally completely covered, with the advent of torrential rains in the upper cañon. The stream-facing side of the largest rock in this group is the site of a very extensive colony of Cliff Swallows (fig. 39). Mr. Louis A. Sackett, whose ranch fronts on the creek at this place, states that the birds have nested there for many years (as long as he can remember) and the place is known locally as the "Swallow Rocks". Other possible sites are available to the swallows in the vicinity, on other rocks of the same group and on various outcrops in the surrounding hills; but the local population, save for a few pairs nesting on a closely adjacent similar rock, all place their nests on this one large rock, which, to the writer, seems to be the safest location available within a radius of a mile or more. The base of the tenanted rock touches the adjacent shore, but the overhanging slope and texture of the surface on which the nests are located precludes attack by terrestrial enemies.

This colony is, apparently, completely rebuilt every year. On June 17, 1925, when the accompanying photographs were taken, there were, so far as could be determined, about 400 nests in the colony. On March 14, 1926, when the site was revisited, not a single nest remained, flood waters from the stream, and winter rains having scoured the rock bare. The area occupied by the main colony in 1925 was approximately 10 by 10 feet in extent. No nests were closer than about three feet to the

[1] Contribution from the Zoological Laboratory, College of Agriculture, University of California.

water, suggesting that late spring freshets had washed off any lower nests to an even line. The nests were placed so closely together that in a number of instances the wall of one nest served as a starting place for another later nest. A few nests were built entirely upon others, not reaching the rock at all. There was a general tendency toward a retort shape, best seen in isolated nests, but the congested condition of the colony resulted in many departures from the conventional form. One nest was bowl-shaped, open at the top, suggesting the nest of a Barn Swallow. A few were placed at right angles to the rest, the entrance then being against the rock surface. The entrance aperture tended to be about 40 millimeters (1⅝ inches) in diameter, but slightly broader than wide. The circle of attachment at the back varied from 120

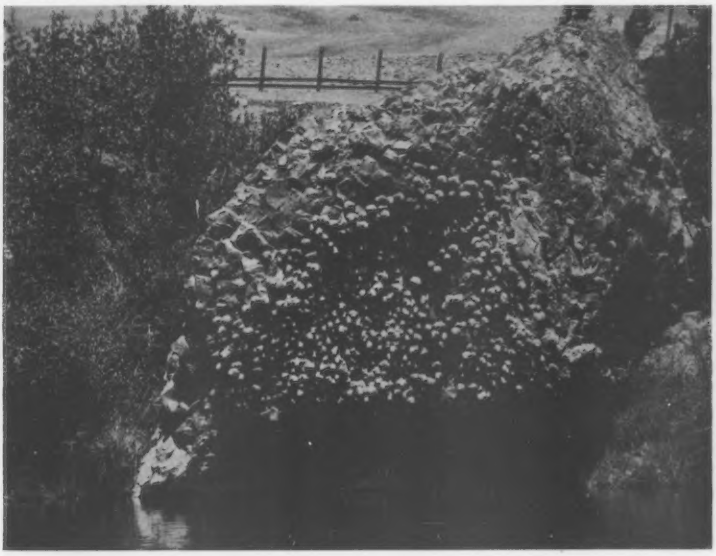

Fig. 39. NESTING COLONY OF CLIFF SWALLOWS ON ROCK IN PUTAH CREEK, THREE MILES SOUTHWEST OF WINTERS, YOLO COUNTY, CALIFORNIA. PHOTOGRAPHED JUNE 17, 1925.

to 140 millimeters (about 5 to 6 inches) in diameter. The mud used was in general free of organic material, but occasionally it included a few fine grass stems. Much of the material was secured at a point about a mile from the colony, there being no suitable material closer to the site. The construction of each nest therefore involved flight aggregating several hundred miles upon the part of the parent builders. Many of the pellets showed an impression of the broad weak bill of the adult, used finally to push the tiny rounded "brick" into its place in the structure.

The lining in each nest was a shallow pad of fine dry grass stems. Fields above the creek on either bank over which the swallows were foraging afforded an abundance of this grass. Extension and repair of nests were continued even until large well-feathered young were present in the nests. A tendency to keep the entrance to a constant size was evident.

On May 31 there were both eggs and young birds in the nests, but no young were seen abroad. Of four nests opened on June 1, three held two, three and four eggs, respectively, and the last had five well-fledged young together with a single unhatched egg. Five other nests on another rock close by included two nests each with three eggs, one with four eggs, one with no eggs but showing signs of fresh repair, and a fifth with two small young, the partially mummified body of a third, and two eggs. Examination of six nests in the main colony on June 17 showed all to contain young, some ready to fly, others with down feathers, and the definitive feathers in the sheaths.

On the two earlier dates mentioned there was a large and constantly changing population of Swallows going to and from the colony. Each adult upon approaching the site seemed to have a sense of the exact location of its nest. Almost without

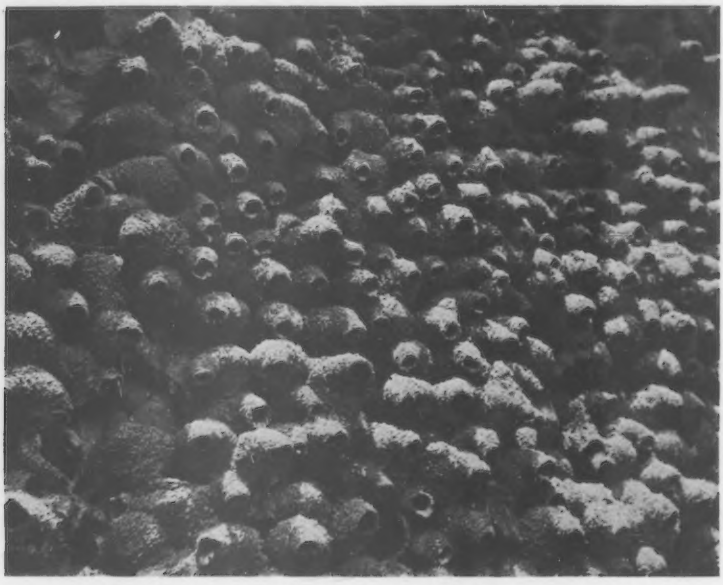

Fig. 40. CLOSE VIEW OF CLIFF SWALLOWS' NESTS IN PUTAH COLONY, SHOWING DENSITY OF PLACING, WITH SOME NESTS EVEN BUILT UPON OTHERS.

exception an arriving bird coming in low over the water would check its flight by a nicely gaged upward sweep which brought it to the proper entrance with but little fluttering. Each bird stayed but a short time (ten seconds or so) and then departed toward the forage places again. One adult, shot near the colony, disgorged two Coccinellid beetles, a house fly, a large (stable?) fly and numerous smaller flies, an indication of the food then being supplied to the young.

By June 17 adult activity had increased apace with the greater percentage of young; the adults were abroad more, the number of arrivals per minute was larger, and when frightened away the parent swallows returned more quickly than they had earlier. No young were actually detected in flight about the colony; but one young bird which was taken from a nest, upon being released, made off on steady wings and was soon lost in the cloud of birds in front of the colony.

The sanitary condition in the individual nests varied according to the length of time during which they had been occupied. Excrement was often dropped by some of the adults just as they departed from the colony, as a nearby rock held many white spatterings. A few droppings littered the front of the colony. Nests containing eggs were relatively clean; but those tenanted by a well-fledged brood often were fouled to a depth of more than an inch.

Fig. 41. NESTING SITE OF CLIFF SWALLOWS NEAR ROUND LAKE, ELDORADO COUNTY, CALIFORNIA, AT AN ALTITUDE OF 9000 FEET. THE NESTS WERE LOCATED IN A NICHE NEAR THE TOP. PHOTOGRAPHED IN JULY, 1925.

The forage range of the (800, more or less) adults belonging in this colony was for the most part within a radius of two miles of the colony. A few were seen to go farther away beyond the hills forming the cañon, but certainly a large part of the population secured its forage within the limits indicated. Some individuals foraged over the creek, others over dry grass pastures or fruit orchards, and often a considerable percentage of the whole population gave attention to a single one of these forage areas.

In such a location the Cliff Swallows probably were able to bring forth a relatively high percentage of their young with success. The nest material held together well, so that none of the nests dropped off, as sometimes happens in swallow colonies elsewhere (for example, at Stanford University). Terrestrial enemies could scarcely reach the site. Occasionally a precocious fledgling fell victim to fish in the water close below the colony. But the really limiting factor in the size of this colony would seem to be the availability of nesting places (few parts of the big rock are unused), and the extent of the food supply available during the breeding period.

The above described colony was located in the heart of the breeding range of the Cliff Swallow. The other two colonies which I wish to mention are well above any previously described station for the species. Heretofore the Cliff Swallow has been recorded at 7000 feet in the San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., vol. 5, 1908, p. 106) in the Transition Zone. The records now to be set down pertain to the middle element of the Boreal region, namely the Hudsonian Zone.

On July 12, 1925, at Silver Lake, Amador County, altitude 7200 feet, a single Cliff Swallow was seen carrying mud for nesting. The nest site was not learned. Five days later, upon climbing to the southern rim of the basin surrounding Silver Lake, in rocks at an altitude of 8400 feet, I found a colony of about 30 nests of this species. Many adult birds were flying to and from the colony at frequent intervals. On this same ridge as associated species were the Mountain Bluebird, Clark Nutcracker, Audubon Warbler and Mountain Chickadee. Trees close by were the Mountain Silver Pine (*Pinus monticola*) and Alpine Hemlock (*Tsuga mertensiana*).

Again, on July 31, near Round Lake, about 15 miles south of Lake Tahoe, another colony of Cliff Swallows was observed in a niche in andesitic rocks at an altitude of 9000 feet. Several nests were seen and at least three birds were flying about the rock, while others were heard out over the nearby lake. Mountain Silver Pine, Lodgepole Pine and Alpine Hemlock were the associated trees, while on the slopes adjacent were noted the Mountain Quail, Clark Nutcracker, Mariposa Fox Sparrow and Audubon Warbler.

Ecologically, these three sites were strictly similar; each afforded safe nesting places and abundant food for adults and young, although the daily heat quotient of Putah Cañon is far in excess of that of the upper Sierra Nevada. Temperature *per se* can scarcely be called to account for the absence or presence of the Cliff Swallow in a particular locality. Rather does its immediate *local* distribution rest upon the ecological factors named.

Davis, California, April 5, 1926.

A METHOD FOR KEEPING NOTES AND FILES DEALING WITH ORNITHOLOGY

By ALEXANDER WETMORE

METHOD in handling personal notes and records pertaining to work in various branches of science is so perennial a subject for discussion that the present writer may be pardoned for outlining briefly a scheme found of advantage in an accumulation of papers from over twenty-five years of active labor in various branches of ornithology. It is obviously important to keep notes in such a manner that they may be available for consultation with the least expenditure possible in time and labor, as otherwise they are useless. The scheme presently to be outlined has been devised with this end in mind.

In introduction it may be said that the writer, as a boy in the late nineties, had an inkling of the value of loose leaf records and, though such methods were wholly unknown to him from contact with others, conceived a scheme of keeping field notes on slips of paper, using a separate sheet for observations on each species of bird. These sheets were pierced by two holes in one end, and were carried in the field on a frame constructed with two smooth wires to receive the paper, an upright back, and a hinged cover, all of light wood. The sheets were removed when used and filed in pigeon holes, an opening being assigned to each species of bird.

After some years at this, through instruction found in the introduction to Coues' Key, a journal system was started which covered general matter as well as observations on birds, and later included a field catalog of specimens. For a time this sufficed; but as journals increased in number and miscellaneous notes and drawings of all sorts accumulated in other form, it was appreciated that there was frequently great loss of time in locating desired data when wanted, if they could be found at all. This led, after some thought and experiment, to the elaboration of a simple system that has stood the test of twelve years of active work and seems to serve all necessary purposes. Details of the system are as follows.

In work in the field I use a loose leaf note book that holds paper five inches wide by eight inches long. This I have cut from Empaco Bond, ruled transversely in faint blue to give nine spaces to every two inches, with a space of five-eighths of an inch at the top for headings. This paper is strong but thin. To hold this, a cover with round rings should be chosen (I use the I-P holder no. 2308), as flat rings have a tendency to cut the paper. The ordinary cover with rings an inch in diameter will accommodate 300 sheets of the paper mentioned.

In daily observation I carry a small note book of pocket size in which to jot down records of song, peculiar habit, or anything else of interest in highly abbreviated form. In the permanent note-book a daily journal is kept in the front with statement of date, area visited, remarks on vegetation, persons, or any general features of interest. Behind this is a section devoted to birds, with a separate sheet for each species, headed with the scientific name of the bird (the common name would serve as well). On the first line is written the locality, underlined to make it stand out, followed by the day of the month and the year. Following may be a simple statement, as "seen", "common", with any note of interest. For subsequent days at the same locality the month and day are entered with additional observations. If the site of observation is changed, the new locality is written in at the beginning of the next vacant line and notes entered as before. All this is done with reasonable but not meticulous neatness.

In work in North America the separate sheets are arranged in A. O. U. Check-list order. Each evening I run through and fill in all data in the proper place, referring to the little notebook for any information accumulated during the day. Sheets are used on both sides, leaving vacant a space of five-eighths of an inch on the inner margin for subsequent binding. As one sheet is filled, a blank one with the proper heading is substituted.

Notes on dissections or other matter that I desire to keep separate from observations on habits are written on separate sheets, either in the front or back of the notebook, each sheet thus used being headed by the name of the bird, the place and date. As the cover becomes too full, the completed sheets and journal are removed and filed in an envelope for safe keeping.

In work in foreign countries where strange birds of unknown name are frequently encountered, some catch name, usually descriptive, is written in pencil at the top of the sheet and reference is made to the skin catalog numbers of specimens taken to assist in subsequent allocation of data. Subsequently, when the collections made are studied, the proper names are written in, in ink.

Where there is change in locality bringing an entire shift in the avifauna, as from Maryland to California, an entire new set of species sheets is begun to avoid useless clogging of the notebook with forms not present. The paper used is inexpensive so that there is no profit in searching for sheets previously removed from the notebook cover and put away in order to make new entries. It is simpler and better to start another sheet. In the diversified avifauna of the Tropics a bird may be met only at intervals of months, but observations entered on separate sheets and removed from the cover may be arranged properly together, later.

At times, the daily task of running through the sheets seems laborious; but subsequently, when trips or sets of observations are completed, one feels more than repaid by the facility with which notes may be consulted. The system as outlined serves all the purpose of a roll book such as is used by many, since it gives daily records of occurrence and has room in addition for endless observations of additional kind. It is possible with this system to write accounts of field observations after an interval of years as readily as while details are still fresh in mind, as all data is assembled where it can be digested and condensed into the form desired without necessity for endless examination of pages of extraneous interest.

In practise, field notes on birds when completed are all assorted in proper order and are placed in spring-back binders. As journals accumulate they are arranged properly and then bound in permanent binding (at some bookbinders), with inclusive dates stamped on the back of each volume. Usually a sheet in the front gives dates of various expeditions, and twenty or twenty-five blank sheets bound in the back furnish space for inclusion of any data that it may be desirable to add later.

In work in the laboratory or museum the same five-by-eight sheets that have been described are frequently used. Where the notebook is not at hand, however, rough notes are made on any piece of paper, up to ordinary letter size, that comes to hand.

Many of these written notes have no particular significance and are destroyed when they have served their purpose. It is frequently desired, however, to preserve rough notes for further reference. For this purpose I employ manila folders, letter size, placed in drawers in a filing cabinet. My work has been more or less cosmopolitan, so that a comprehensive scheme is required. A series of heavy guide cards is marked with the names of the families of birds of the entire world, arranged in systematic order. Behind each family guide there is first a manila folder for general notes on the family and then a series of additional folders, one for each genus on which

there may be observations. In these folders are placed any miscellaneous sheets of notes containing references to literature, measurements, notes on specimens, drawings, photographs, and author's separates (where these concern individual families, genera, species or subspecies). When the five-by-eight field notes that have been described have been written up in final form they also are filed in these same holders. A manila folder for a genus may thus have a set of notes dealing with several species, and it may include a wide range of subjects from published descriptions of new forms to rough notes on anatomy. Many of these may not be wanted again after they have served their original purposes, but if desired they are at once available without loss of time in search for them.

A second series of folders is devoted to avian paleontology, a third to anatomical subjects, general topics, and so on. The scheme is highly flexible and can be adapted to any need. Folders with double thickness tabs such as are now available from the Library Bureau are preferable, since they stand wear better than the ordinary form.

As an example of the effectiveness of this filing system I have examined in the past month data on certain birds prepared over twenty years ago, all without the slightest loss of time. The method perhaps may not be as handsome as series of notes all made or copied on uniform cards, but it is highly practical in that it requires no waste of time or effort in maintenance. In actual practise I accumulate miscellaneous notes in a tray and file them once a month, or oftener if so minded. At present my notes are in steel cabinets with sliding drawers, but this is not necessary. For years I kept them in wooden boxes of the proper size.

In addition to the file of notes that has been described, a manila jacket is assigned to each manuscript under preparation, in which all notes pertaining to that particular paper may be kept together where they are readily available. Thus a piece of research may be laid aside for weeks or months and then brought out with all material immediately at hand.

The scheme as outlined may be modified to suit individual needs. Where varied work of any extensive character is carried on, it is certain to prove highly effective. The form of field notebook here described has been adopted by a number of the workers of the Biological Survey.

United States National Museum, Washington, July 30, 1926.

NOTES ON SWARTH'S REPORT ON A COLLECTION OF BIRDS AND MAMMALS FROM THE ATLIN REGION

By ALLAN BROOKS

THE above Report, from volume 30, University of California Publications in Zoology, is one more example of its author's painstaking methods and careful presentment of his conclusions. His descriptions of the region visited are models of their kind, embodying as they do a vivid portrayal of the character of each type of country without any waste of words.

After accompanying the author throughout most of his tour, I placed whatever notes and material I had collected at his disposal. The notes included a list of the birds seen by the writer during a ten day stay at Log Cabin in the extreme northwestern corner of British Columbia some fifty miles west of Atlin. Mr. Swarth has not included the additional species I observed there in his list, so I will record these in the present paper together with some comments on the list itself.

Log Cabin is a station on the White Pass and Yukon Railroad a few miles east of the Alaskan boundary. It lies at the head of a wide valley, altitude about 3000 feet, which runs out in a southeasterly direction to the Taku arm of Lake Tagish, the route of the old Fantail trail of the days of '98. The region is essentially in the Hudsonian life-zone, fauna and flora both showing far more elements of the Boreal than are found at the same elevation farther in the interior. Swarth has already commented on the Boreal affinities of the Coastal mountains in his report on the Stikine region, and it is still more obvious farther north.

The wide flat valley south of Log Cabin is a waste of rocky ice-worn ridges interspersed with shallow lakes and stretches of muskeg, the latter mostly covered with cotton grass. A good deal of stunted balsam occurs together with some belts of larger timber, mostly lodgepole pine, western hemlock and spruce.

Birds were very scarce and the absence or scarcity of such birds as Pine Grosbeaks, Crossbills and Woodpeckers was notable. The White Pass a few miles to the westward is obviously a well-used migration route, judging by the obvious movement of birds from the direction of Lake Bennett westward through the pass.

Marila marila. Greater Scaup. Not included in Swarth's list. He says "Scaups seen at Carcross, May 22, were presumably *M. affinis*." All the Scaups we saw there were undoubtedly *marila* and were listed as such without any reservations. They were all obvious migrants only. We did not see the Lesser Scaup until we got to Atlin about a week later.

Glaucionetta clangula americana. American Golden-eye. One immature male, a sick bird, frequented the islands in front of Atlin village.

Clangula hyemalis. Old-squaw. Breeding at Log Cabin; several flying broods seen and one young bird taken with primaries still in their sheaths and unable to fly September 1. This constitutes the first British Columbian breeding record for the species and the most southerly one for the Pacific Coast.

Tringa solitaria. Solitary Sandpiper. After a long and careful study of the two forms of Solitary Sandpiper, extending over a period of some forty years acquaintance with both forms in the field, I cannot agree with Swarth that there is "no more satisfactory mode of dividing them than by regard to the points of capture". The western form, *cinnamomeus*, can always be separated in the juvenal plumage by the buffy spotting of the upper surface, size and the presence of freckling on the inner web of the first primary. The constancy of the characters are in the order named. The adults are harder to separate, as there is no buffy coloration in the spotting of the adults of the western form. The breeding ranges of the two are ill defined, chiefly owing to lack

of material. On migration, the two are found together over the whole of the west. *T. s. solitaria* occurs in British Columbia as absolutely typical juveniles in the proportion of one in three, while *cinnamomeus* is common on the prairies in the fall at least as far east as Saskatchewan.

Dendragapus obscurus flemingi. Fleming Grouse. While in absolute agreement with Swarth in his general treatment of the forms of the grouse of this genus I must differ on two minor points. First, we cannot assume that *obscurus* of Colorado has been definitely proved to belong to the *richardsoni* group. Further field observations on its courting actions and the color and character of the inflatable neck skin are needed to prove this. Geographical distributions are sometimes anything but "logical".

Second, Swarth is well aware of the presence of a very dark form of *richardsoni* with all the characters of *flemingi* throughout the whole of the humid southern interior of British Columbia. Yet he makes no mention of this fact and ignores it in his distributional map. In our conversations on the subject he mooted the possibility of the range of *flemingi* extending right down to the Selkirk ranges of southern British Columbia where the darkest races of *richardsoni* exist.

The best character for separating *flemingi* from typical *richardsoni* is not the darker coloration of the males; any large series will show dark colored *richardsoni* and, as in Swarth's Teslin Lake bird, light colored *flemingi;* but the blacker under tail coverts of the last named form with small white tips, instead of the white tip covering almost the whole exposed portion of the feather as in *richardsoni.* But birds from Revelstoke, Selkirk range, in southern British Columbia show the extreme of blackness of the lower tail coverts. It is possible that a wedge running southward to or near the British Columbian southern boundary splits the range of *richardsoni.*

But we must consider the extreme susceptibility of all grouse to conditions of humidity and environment and not judge them by the standards that are used in other orders.

Lagopus rupestris. Rock Ptarmigan. Swarth's disposition of the Willow Ptarmigan group seems so logical and conclusive that I wish I could corroborate his findings in the equally difficult Rock Ptarmigan group. Nothing carries greater conviction than a map with neat symbols conveying an idea of a definite distribution. I must disorganize Swarth's map of the distribution of the Rock Ptarmigan in one important particular, however. The four birds I loaned him which he calls *rupestris* were not collected at Bennett as he states but on the White Pass summit and on the Alaskan side of the boundary, or exactly where the "dark and extremely rufescent" specimen, no. 13462, was taken. This last, together with the male that accompanied it, he unhesitatingly ascribes to *dixoni,* while my birds are placed with *rupestris.* It is impossible to say how the mistake as to locality of my birds was made. Knowing that they should provide important testimony as to the validity of the race *dixoni,* I labeled them very carefully on the spot "White Pass Summit, Alaska-B. C. boundary". Bennett is a long way to the east of this and would be a most unlikely place for Rock Ptarmigan to occur, at any rate in summer time.

As to the Rock Ptarmigan male having only two plumages, I think Swarth refutes this himself when he states that the first summer feathers are brown and black barred, to be followed later by the finely vermiculated feathers. Two distinct types of feathers are here indicated; just as they exist in the male bird, these broadly barred and blotched feathers are conspicuous in the upper plumage of all Rock Ptarmigan, even after they have acquired the complete fall dress. A similar condition exists in the white-tailed species. It is seldom that the change to summer plumage is carried very far in either of these species before being overtaken by the intrusion of the fall plumage, but it does exist and is sometimes fairly complete. The Willow Grouse inhabiting lower altitudes where the ground is sooner clear of snow usually acquires a complete summer plumage before the arrival of the lighter and more finely marked feathers of the fall.

Astur atricapillus atricapillus. Eastern Goshawk. I entirely agree with Taverner that the heavily barred and striated adult plumage of the Goshawks is only one of age and is acquired the second year, the markings getting finer and more uniform with each successive year. This heavily marked stage may not be universal—it would be rash to say that anything was constant with such extraordinarily variable birds as the raptors. But that it does exist in a large proportion of cases is evident to anyone who has examined many Goshawks, not only in the dark colored race of the extreme northwest, but in the palest of eastern birds. Hence it cannot be regarded as a sub-

specific character. I have not seen the specimen taken September 5, so cannot say anything about its peculiarities. But the other "similar bird collected by Brooks" distinctly supports Taverner's theory, as does another light-colored adult taken at Atlin which Swarth has forgotten.

Buteo borealis calurus. Western Red-tailed Hawk. Swarth has made out a good case for recognizing the existence of a form *harlani*, but his memory is responsible for one vital flaw. The ordinary type of Red-tail (pale colored *calurus*) was seen by me in the heart of the breeding range of "*harlani*" at least seven times. In fact I suspected that a pair of typical red-tailed birds was breeding only a few miles from our quarters at Atlin.

It is as well to make a clean breast of the circumstances to explain why a large series of Harlan Hawks was not brought back. From the time we landed at Carcross, Yukon Territory, we were almost constantly in sight of pairs of large dark Buteos. These we identified as Swainson Hawks and I made no effort to collect them, as I took them to be the regular black form of this species occurring in the mountains of western British Columbia. Also we wanted to see what the juveniles were like; the first juveniles that flew we took, and to our surprise they were not Swainson Hawks at all!

Then we started to try for all the dark-colored adults and with poor success, as once the nesting was over they were wary and hard to shoot. The seeming presence of ordinary Red-tails during all this period, of course, called for no comment. The cry of the "Harlan" Hawks certainly seemed to be weaker, which may account for the error, though it certainly does not excuse it. In canvassing all possibilities that might be encountered, I never thought of the Harlan Hawk, which only shows how experienced collectors may pass by a good thing.

Swarth's memory has failed him in regard to the adult "*harlani*" that I took. This is not "uniformly dark colored", but is a very pale bird, suggesting the light-colored phase of the young American Rough-leg. I must admit also that we must have both been in error in counting the primaries of this specimen. Dr. Wetmore and Mr. Taverner, who have carefully examined it, have convinced me that the fourth primary must be missing on each wing; and this explains why it appears to have only three primaries emarginated.

The status of *Buteo borealis harlani* can only be solved by further field work—the taking of many mated pairs of breeding birds. It is to be hoped that the splendid series in the Victoria Memorial Museum at Ottawa, together with the detailed field notes of Taverner, may help to solve the problem and also clear up the Red-tailed Hawks generally. The subspecies *krideri* and *alascensis* can certainly not, to my mind, exist on the evidence at present submitted.

Bubo virginianus. Horned Owl. The question of the Horned Owls is just as confused as that of the Red-tailed Hawks and likewise cannot be settled by any study of cabinet specimens alone. While some of the Horned Owls that we took in Atlin are pale colored, they in no way approach true *subarcticus* from Manitoba and the Keewatin district. Swarth's citation of the specimens collected should have said young male and female instead of adult male and female taken July 3. These were a brood of two that I took with one parent. The parent was dark, about as in the ordinary breeding form of the Okanagan district. One of the young was similar, the other much lighter, and would have been regarded as another subspecies by most systematists. The other parent (not secured) resembled the light-colored young or was even paler.

Passerella iliaca fuliginosa. Sooty Fox Sparrow. Fox Sparrows of this type were seen at Log Cabin and one was taken. This bird, while dark and lacking the strong reddish tone of *townsendi*, is not as dark as specimens of *fuliginosa* from the Vancouver Island coast; also it is considerably smaller.

Acanthis linaria linaria. Redpoll. Dr. Bishop has already recorded the occurrence of the Redpoll in the breeding season at Bennett (North American Fauna no. 19). The species had presumably bred in some numbers at Log Cabin. Small parties and single birds were frequently seen and a young bird in first plumage was taken. It was not seen at any time during our stay in the Atlin region proper.

Okanagan Landing, B. C., November 14, 1926.

FROM FIELD AND STUDY

Audubon Warbler Eating Grapes.—On November 16, 1926, in the eastern suburbs of Stockton, California, while waiting in front of a house where my companion was calling, I saw an Audubon Warbler (*Dendroica auduboni*) thrust its bill into some grapes lying within a few feet of the automobile in which I was sitting, and drink the juice. This was repeated several times. Wood warblers are generally credited with being mainly insectivorous. It therefore seems worth while reporting a clear case of one of these birds taking any other kind of food, especially fruit juice, which could probably never be identified among stomach contents of collected birds. Audubon Warblers are not very brilliantly colored in November; but they are so frequently seen that any of us amateurs may, I assume, be trusted to make sight identifications.—CLAUDE GIGNOUX, *Berkeley, California, November 22, 1926.*

A Note on the Longevity of the Pintail.—The longevity of birds is of interest to the ornithological investigator and much has already been written on this subject. Unfortunately, the sources of information have been limited largely to zoological parks and private aviaries which, while supplying important data concerning the span of life that a bird *can* enjoy, fail to furnish a standard by which it is possible to calculate the life term of the bird in a state of nature, there confronted with all the perils attendant upon its every-day existence. The advent of the banding method, particularly through systematic trapping, was promptly recognized as a means of obtaining exact data bearing upon this subject. There can be little doubt that this confidence will be justified by the records from trapping stations, when operations have been carried on continuously for a sufficient period to make possible the computation of proper averages. Obviously, some time must elapse before such records will be forthcoming, and premature deductions should be carefully avoided.

Records from banded game birds will, of course, be reported through the medium of sportsmen, and in this connection the following case seems worthy of record, especially since it appears to represent the longest time record for any bird banded in America. On September 16, 1914, Dr. Alexander Wetmore banded an adult male Pintail (*Dafila acuta tzitzihoa*) at the mouth of Bear River, Utah, using Biological Survey band no. 519. This bird had been suffering from the duck sickness (alkali poisoning) and had been successfully treated and brought to complete recovery by Doctor Wetmore. It was killed on October 16 or 17, 1926, ten miles north of Brawley, California, by Mr. H. W. Seybert. The band was accordingly carried by this bird for 12 years and 22 or 23 days, a most remarkable record, in view of the fact that each season it had run the gauntlet of hunters and also had escaped the poisonous alkali areas and other natural enemies.

The band was of the type that carry the legend "Notify U. S. Dept. Agt., Wash., D. C.," and was made of thin but well-tempered aluminum. Mr. Seybert has forwarded the band to the Biological Survey, and it is in excellent condition. The edges show considerable wear, but the legend and number are clear and legible, indicating that it would have lasted for many additional years. As the bird was adult when banded, it was at least 13 years old when killed.—FREDERICK C. LINCOLN, *Biological Survey, Washington, D. C., January 11, 1927.*

Some Results of Removing Banded Birds to a Distance.—In the latter part of August, 1926, while the writers of this paper were at Big Bear Lake, an attempt was made to continue experiments in removing banded birds to a distance, which had previously been commenced by Pierce (Condor, XXVII, 1925, p. 120). Bear Lake, with an elevation of about 6750 feet, in the San Bernardino Mountains, is at present some 5½ miles long by a little less than a mile in width, with Baldwin Lake lying about three miles to the east. All the localities mentioned below, with the exception of the slope 1½ miles up Red Ant Creek, are on the floor of Bear Valley; the Red Ant Creek locality is some 500 feet up a one thousand foot ridge overlooking the south side of Bear Lake.

During seven days forty-four Sierra Juncos (*Junco oreganus thurberi*) were released late in the afternoon, at various distances from the Pierce studio at Pine Knot, which is on the south side, and nearly midway from the extremities, of Bear Lake. Unfortunately, time was lacking for the proper care of our birds during the hot part of the day, so that a few were released in a weakened condition, and one died en route to the point of liberation. This should be borne in mind when the percentage of returns is considered, as well as the fact that our activities were carried on just at the time when the young were leaving their parents and, presumably, scattering out, with the loss of attraction to the home locality.

August 14, 1926, of seven Juncos taken to Camp Eureka, two miles east of the Pierce studio by air line, and on the same side of the lake, two returned August 16, and the third on the day following. The first two were immediately taken up Red Ant Creek, which flows past the studio, and released 1½ miles by air line southwest of home. One returned in seven days and was not further disturbed. The other bird returned the day after being taken there, and was this time taken to Fawnskin, which is about two miles north of the studio and on the other side of the lake; the distance by land around either end of the lake, from the studio to Fawnskin, is approximately ten miles. Three days later he was back once more. The third bird, which had returned from Camp Eureka August 17, was taken over to Fawnskin with the last mentioned individual, but was not recaptured. The other four from Camp Eureka were not seen again.

On August 15, 1926, seven new Juncos were taken to the south side of Baldwin Lake, about six miles east in a direct line from the studio. One returned six days later, and was immediately taken to Fawnskin, not to be seen again. The other six failed to appear.

On August 16, eight birds were taken 1½ miles up Red Ant Creek, as in a former case. One returned the 17th, and another the following day; these two were taken to Fawnskin, when recaptured, but were not heard of again. One more returned from Red Ant Creek August 29, and was not further disturbed.

From August 17 to 21, inclusive, twenty-two new birds were taken to Fawnskin; but of these only one, liberated on the 17th, came back, the date of its arrival being August 21. Unfortunately, time was lacking for further experiments, so that it is impossible to say how many Juncos may have come back after August 30, when the traps were taken up. However, although such small numbers were involved, the following percentages of returns from the four localities are given for what they are worth.

1. Those released at Red Ant Creek, 1½ miles southwest of the Pierce studio, 50 per cent.
2. Those released at Camp Eureka, 2 miles east of the studio, 43 per cent.
3. Those released at the south side of Baldwin Lake, 6 miles east of the studio, 14 per cent.
4. Those released at Fawnskin, 2 miles north of the studio, but across Bear Lake, 10 miles by land, 4 per cent.

It is interesting to note that in the case of immature birds, the proportion of returns to the number released is practically identical with that of the adults, although it seems very unlikely that these young birds, so recently from the nest, had ever been near those localities before. Also the return of the birds can not be explained upon the basis of unsuitable conditions, because others of their species nest commonly in these localities, with the exception of Baldwin Lake; and Juncos were there in abundance throughout these experiments.—E. L. SUMNER, JR., and W. M. PIERCE, *Claremont, California, November 10, 1926.*

Traps for Banders.—The Western Bird Banding Association has had developed and manufactured for sale to banders two types of traps, the four-compartment Potter trap and a Warbler trap. The four-compartment Potter trap (fig. 42, a and b) is a folding trap having the same dimensions, when erected, as the two-compartment Potter trap, namely, 8x8x18 inches. Each compartment is 4½x8 inches, and 8 inches high. The four doors are all on the same side of the trap and are automatically tripped by the bird as it enters over the doorstep treadle. The trap folds into a bundle approximately 2x8x18 inches and weighs 3½ pounds. The feature of having the doors all on the same side makes the trap convenient for setting against or under the edge of

shrubbery; two of these traps set back to back gives an eight-compartment combination which is desirable when birds are plentiful. Folding traps are particularly convenient for those who wish to take their traps with them on trips about the country. A stock of these traps will be kept on hand and will replace the stocks of two-compartment Potter traps and Western traps previously kept. The price is $5.00 each, f. o. b. Pasadena.

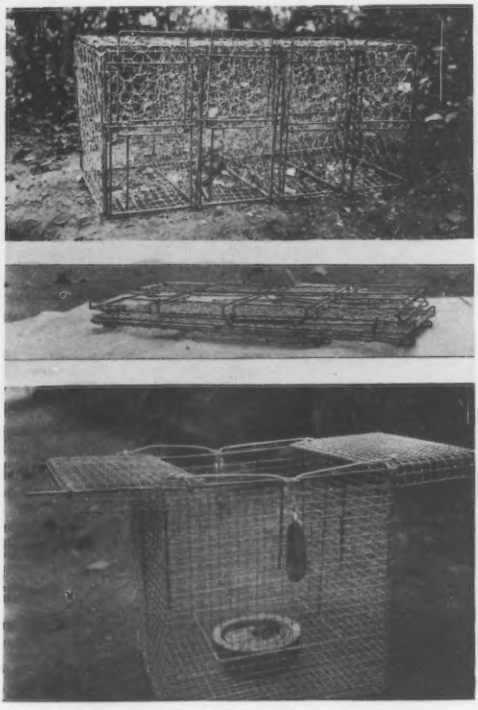

Fig. 42. BIRD TRAPS FOR BIRD BANDERS.
a. Four compartment folding Potter trap erected.
b. Same trap folded.
c. Warbler trap, Michener design.

The Warbler trap (fig. 42, c) is a 12-inch cube of ½-inch mesh hardware cloth with double sliding doors to close the top. The doors are closed by weights and are tripped by the bird alighting on a treadle beside the water bath. This trap is a decided improvement over the original of this type (see Condor, XXVIII, 1926, p. 49, fig. 20), which, however, has added quite a few species to the list trapped at the station of the writer. The trap weighs 5½ pounds and its price is $5.00 f. o. b. Pasadena.

The Association also has a supply of trap doors and door frames, as shown on the last page of the October number of "News from the Bird Banders" and similar to those used on the Potter traps. The frames are arranged so that they can be fastened at the opening of almost any type of trap. The door may be used as an automatic drop door to be tripped by a doorstep treadle similar to that used in the Potter trap, as an exit door for any trap, or for the door to a gathering cage. The price of 60 cents each, f. o. b. Pasadena, includes the door frame, the door, and the doorstep treadle.

Please address the writer when in need of any of the above articles.—HAROLD MICHENER, *418 Elm Ave., Pasadena, California, December 22, 1926.*

American Dipper Established as a Breeding Species in San Diego County.—*Frank* Stephens, in his *"Annotated List of the Birds of San Diego County, California" (Transactions of the San Diego Society of Natural History, III, No. 2, p. 29) states that the American Dipper (Cinclus mexicanus unicolor) is a rather rare migrant through the mountains and casual winter visitor, but that it does not nest in the county. As a matter of fact there appears to be no record of the actual capture of a Dipper in San Diego County at any season, and Mr. Stephens states that he knows of none. It is, therefore, a pleasure, through notes supplied by Albert E. Stillman, a member of the San Diego Society of Natural History, definitely to record the species as a nester in this county, both in 1925 and 1926.*

Each of these years a nest was found at the same locality by Harry Benbough, a member of a boys' bird club conducted by Mr. Stillman. For fear that the birds might be disturbed, Mr. Stillman prefers that the exact site be not made public, beyond the fact that it is on a falling stream of water in the Cleveland National Forest at about 3500 feet elevation. The first nest, discovered in August, 1925, was on a rock about three feet from the falls. The moss of the nest had been kept green by the spray which touched it. Two Dippers were observed on the rocks below, but the nest was not examined. On June 20, 1926, the second nest was found on a ledge under a large rock about twenty feet from the falls and five feet from the stream. It contained four full-fledged young. On June 27, 1926, Mr. Stillman, Harry Benbough and George Smith collected the empty nest, which has been presented, with full data, to the Natural History Museum.—CLINTON G. ABBOTT, *Natural History Museum, Balboa Park, San Diego, California, September 21, 1926.*

The Water-Thrush *(Seiurus noveboracensis)* the Initial Species in the Autumnal Migration through Costa Rica.—This species was seen on August 12, 1926, beside a puddle in an old logging road near Iberria Farm, at the north base of the Volcano Turialba, and again near-by a few days later. It had been first to arrive on several preceding years, and I suspect that it is the leader of the North American avian host in this part of Central America every fall. True, Broad-winged Hawks and Solitary Sandpipers can now and then be seen here in Costa Rica every month in the year; but I judge this sufficient proof to exclude such individuals from migratory status.—AUSTIN SMITH, *San José, Costa Rica, September 7, 1926.*

Nesting of the Sandhill Crane in Modoc County, California.—On May 6, 1926, a Mr. Christensen showed me the nest of a Sandhill Crane (*Grus mexicana*) on his ranch about twenty miles from Alturas. The nest was in a small patch of tules (*Scirpus*) in a wet meadow. When we approached the nest, the female (?) rose, disclosing two eggs, and flew to the meadow a short distance off. The male (?) rose from the tules and joined her. We followed and the two birds walked ahead of us, making no sound till they were about half a mile from the nest, when they began to "cronk". The nest was made of dead tule stems, was about five feet in diameter at the base, and the central portion, built up so that the eggs were about one foot above water, was about two feet across and almost flat. Mr. Christensen had flushed the female from the nest about ten days before, when she was already incubating two eggs.

Mr. Joseph Mailliard (Condor, XXVI, 1924, p. 216) has recorded the finding of a nest and of a half-grown young in Surprise Valley in 1924. With this exception, there seems to be no definite record of the nesting of the species in California since 1878 (see *Game Birds of California*, p. 621).—RALPH HOFFMANN, *Carpinteria, California, January 1, 1927.*

Additional Records of the Prairie Falcon in the Willamette Valley, Oregon.—On October 16, 1926, while examining a number of birds and mammals in the collection of Mr. Elmer A. Griepentrog, Salem, Oregon, I observed two mounted Prairie Falcons (*Falco mexicanus*). Mr. Griepentrog informs me that these were taken near Salem, one on November 16, 1924, and the other on December 23, 1925, and he has also given me the following additional notes on this species. On November 10, 1926, two Prairie Falcons were seen and one secured. This specimen was mounted and is now in the Griepentrog collection. On November 16, 1926, two were noted flying overhead and one was seen in an attempt to kill a male Ring-neck Pheasant, which, at each attack from the falcon, would flatten itself against the ground. Another falcon was found dead on November 28, 1926, but was so decomposed that it could not be preserved as a specimen. It would seem that the Prairie Falcon may at times be a more common species in the Willamette Valley than the published records of its occurrence in that region would indicate.—ALEX. WALKER, *Tillamook, Oregon, December 24, 1926.*

***Atthis heloisa morcomi* Ridgway, Not a Valid Subspecies.**—*Atthis morcomi* was described by Ridgway (Auk, XV, October, 1898, p. 325) from two females collected at Ramsey Cañon, Huachuca Mountains, southern Arizona, in July, 1896. As far as I

know, no male has ever been taken in Arizona. The authorities of the National Museum have kindly lent me the type, now no. 153886, U. S. National Museum; and, through the kindness of Mr. Joseph Grinnell, the other specimen, now no. 10299, Museum of Vertebrate Zoology, is also before me.

The series of *Atthis heloisa heloisa* in the Museum of Comparative Zoology and in the collection of John E. Thayer, number, together, forty-one skins, and they include specimens from Vera Cruz, Nuevo Leon, San Luis Potosi and Tamaulipas. Of these, thirty-two are adult males, five are immature males, but unfortunately only four are females.

The characters given by Ridgway in "The Birds of North and Middle America" (Part v, 1911, p. 595), to distinguish the female of *morcomi* from that of the wide-ranging Mexican *A. heloisa heloisa*, are: "smaller (except bill); paler below with bronzy spots on chin and throat much smaller, sides less extensively cinnamon rufous, and under tail coverts pure white." In his original description of the form, Ridgway said that the second specimen had the under tail coverts more cinnamomeous than in the type, and the spots on the throat still smaller.

The Arizona specimens are not small, nor have they larger bills; Ridgway's own measurements show this. All the color characters claimed for the form fall within the range of individual variation shown by even so small a series as four females of *heloisa*, except that one Arizona bird, no. 10299 Mus. Vert. Zool., has smaller spots on the middle throat and chin than in any of the other specimens examined.

One adult female, no. 28285, coll. John E. Thayer, from Alvarez, San Luis Potosi, taken August 6, 1926, by W. W. Brown, exactly matches the type of *morcomi* in every respect, having very small spots on the chin and throat, being very pale below with little cinnamon on sides, and having white under tail coverts. Two other Mexican females have large spots on the chin and throat, are much suffused with cinnamon below, and have cinnamomeous under tail coverts. A fourth is intermediate. Young males are all nearer the dark females with heavy spotting on the throat.

The other Arizona specimen, no. 10299 Mus. Vert. Zool., is not pale below, but has the sides and under tail coverts quite as strongly cinnamomeous as in the darker Mexican birds. The bronzy spots on the sides of the neck are large, but in front on the chin and throat the spots are very small—mere dots.

Thus: there is no difference in size between *heloisa* and *morcomi;* the color of the under parts and under tail coverts is equally variable in both and is not diagnostic; the spotting of the throat, whether large or small, is also variable and probably dependent upon age, the females with small spots representing the fully adult plumage, and the heavily spotted birds being immature.

This bird is not of regular occurrence in southern Arizona, and the two or three individuals that have been taken there are in all probability mere stragglers from the very wide-spread range in Mexico, of *heloisa*.

Under the circumstances I can see no course but to relegate *morcomi* to synonymy, and to recognize the bird that occasionally occurs in Arizona as *Atthis heloisa heloisa* (Lesson and Delattre).—OUTRAM BANGS, *Museum of Comparative Zoology, Cambridge, Massachusetts, January 27, 1927.*

Fearlessness of Shearwaters.—The Sooty Shearwater was rather commonly seen close in at Hermosa Beach during the spring and summer months of 1926. Although I have been at Hermosa during August for some years past I have never before noticed this bird. However, the most interesting fact was that on walking along the beach, especially early in the morning after a high tide, one would almost invariably find on the strand from six to ten bodies of the Sooty (*Puffinus griseus*) and usually two or three of the Black-vented Shearwater (*Puffinus opisthomelas*). These bodies were rather bedraggled and in some cases the necks were twisted; none was covered with oil. I could do no more than speculate at the reason for the death of so many of these birds.

Being much interested in fishing, I went often to the barge which was anchored about half a mile off-shore. This offered opportunities to study various species of water birds. On about half of the ten or twelve trips which I made to the barge the shearwaters were quite abundant. They nearly all came about the barge for the purpose of feeding on the refuse and bait thrown away; their audacity was surprising. In many cases the birds would come up to the very edge of the boat and dive eagerly

for the salted anchovies and sardines used for bait. Before a fisherman could jerk his hook out of the way the bird would seize it and, although usually detaching the bait from the hook, would sometimes be snagged about the head. In one such case a bird was brought up on deck and taken from the hook which had caught in the loose skin under the mandible. A small boy, much interested in the catch, offered the Sooty Shearwater some fresh sardines, and these, much to my surprise, it quickly snapped up. We both fed it, and during this procedure it stood calmly; but tiring of this it began to waddle along the deck and I tossed it back into the water.

Afterward, I saw many shearwaters caught thus and usually their necks were promptly wrung. They would also dive after a snag sinker which I drew in front of them. In swimming under water they used both wings and feet. They would also swim fearlessly to the side of the barge and dive for small fish hiding under it, which they would usually be successful in capturing. Some fishermen brought guns along with them and apparently took great pleasure in shooting these birds, which could in but an insignificant manner harm the fishing. The dead birds on the beach were thus traced. I wondered that these birds, which have doubtless been persecuted for many years, had not learned more fear of man. We can but hope that enforced protection may be given them before they are exterminated.—JOSEPH H. WALES, *Pasadena, California, November 19, 1926.*

The Olive-sided Flycatcher and Coniferous Trees.—The associating of *Nuttallornis borealis* with cone-bearing trees has been such a definite concept with me that it has never occurred to me to look for their nests elsewhere. The species has been noted frequently, in the Santa Cruz Mountains, during the past three seasons; but each time a bird has been observed, I have merely glanced around to look for a large redwood or spruce, wondering if this or that might be the nesting tree. My time was always deemed too precious to waste looking for such impossible treasures, impossible because of course beyond my reach and luck. Indeed, Barlow's photo (Osprey, II, 1897, p. 13) of "Price after the flycatcher's nest" usually comes to my mind when I meet this bird.

That collectors, generally, have not been taking generous series of sets of our boreal "Contopus" is evidenced by the fact that I locate just one record of such a "find" in the first fifteen volumes of The Oologist. This record accounts for a nest on the horizontal limb of a lone spruce, about twenty feet from the ground. This was at Westbrook, Maine (Oologist, VII, 1890, p. 224). H. B. Kaeding (Nidologist, IV, 1896, p. 20) records a nest on the horizontal limb of a small white fir, fifty feet above the ground, building on June 1, holding three eggs on June 20; Sierras at 4600 feet altitude. Chester Barlow (Osprey, II, 1897, p. 47) reports two nests; one seventy-one feet up, in a silver fir, June 9, the other seventy feet up, on drooping limb of a spruce, June 14; these in the Sierras. Anna Head (Bird-Lore, V, 1903, p. 153) records two nests; one only twenty feet up, in a fir, containing well-feathered young on July 22, the other judged by her to be nearly two hundred feet up, also in a fir; Lake Tahoe. And Joseph Dixon's recent record (Condor, XXII, 1920, p. 200) concerns a nest in a Monterey cypress, placed fifty-seven feet above the ground, June 12; Berkeley; the first record for the Bay Region and almost at sea level.

F. M. Chapman (Birds of Eastern North America, 1899, p. 247) says that the nest is placed in coniferous trees, about twenty-five feet up. Major Bendire (Life Histories of North American Birds, II, 1895, p. 284) says that nest building rarely begins anywhere throughout their range before June 1, usually not before June 10, and in some seasons not before July. Oliver Davie (Nest and Eggs of North American Birds, 5th ed., 1898, p. 245) states that the nest is usually built in evergreen trees. Elliott Coues (Key to North American Birds, 5th ed., I, 1903, p. 524) notes the nest as usually high, thirty to forty feet, on a horizontal bough of a tree (generally coniferous). And Robert Ridgway (Birds of North and Middle America, IV, 1907, p. 505) writes: nest on horizontal branch (usually of a coniferous tree).

The above gleanings from the literature at my elbow make me wonder why certain writers imply that *Nuttallornis* sometimes leaves the conifers to build its nest in other kinds of trees; but I have no time to investigate the case now. Enough to say that I was very much surprised when, about the middle of last May, Miss Emily Smith, of Los Gatos, a member of the Cooper Club, reported to me her finding of a pair of Olive-sided Flycatchers nest-building on May 8, the site a drooping limb of an alder, *Alnus rhombifolia*, the distance from the ground about fifty feet, the locality a canyon

floor at the eastern base of Black Mountain (Monte Bello Ridge), Santa Clara County, elevation probably about 200 feet. I visited this nest on June 5, and saw the parents feeding their young. Coast redwoods were available in the canyon, but these birds evidently used the alder by pure choice.

Meanwhile, on May 23, while resting in the shade after a long, unsuccessful scouting for nests of Wren-tit and Bell Sparrow, an excited pair of "Olive-sideds" arrested our attention. This was near the head of a ravine, a branch of the Los Gatos Canyon, elevation, perhaps, 1800 feet. One large Douglas spruce (*Pseudotsuga*) was some distance down the slope and I remarked that their nest was probably far up in that tree. All about us were oaks, laurel-bays, madrones, etc.; but while our eyes followed one of the noisy birds as he nervously changed his position, I recognized the fact that the other bird seemed to be "having its say" from a more constant location. Thereupon scanning the tree-tops in the direction from which this bird's calls seemed to emanate, I soon spied the moving head of the bird, which was looking at us with first one eye, then the other. I accordingly imagined that this bird was sitting on her nest, and such was clearly seen to be the case as soon as the glasses were focused upon her. A cautious climb of some sixty feet, into the top of a gold-leaved oak (*Quercus chrysolepis*) secured the nest and three well-incubated eggs.

Thus I am able to report two nests of the Olive-sided Flycatcher built in May and in trees totally different from the conifers supposed to be their favorites, although cone-bearing trees were nearby, available, had the birds cared to patronize them. It should be remembered, however, that the season of 1926 was an unusually early one, many birds nesting two to four weeks prior to their usual time.—CHARLES PIPER SMITH, *San Jose, California, November 18, 1926.*

A Hybrid Flicker.—On the morning of October 7, 1925, I was climbing up the side of a hill which was covered with scrub oak trees intermixed with manzanita, poison oak, madrone and other brush. Suddenly I heard a flicker, then a second one. I located them on a nearby ridge and shot one of them. To my surprise, on picking it up, I noted that this bird was not of the species common to this locality. Mr. H. S. Swarth has since informed me that it is a hybrid between *Coloptes cafer* and *C. auratus*. The two birds appeared to be alike, and they are the only ones of the sort that I have noticed in this locality. Have bird observers seen any of these flicker hybrids in this region the last few years?—JAMES L. ORTEGA, *Yountville, Napa County, California, December 6, 1926.*

Notes on the Nesting of the Band-tailed Pigeon.—Albert E. Stillman, a member of the San Diego Society of Natural History, has lived for several summers in a cabin at about 4000 feet elevation near Mesa Grande, San Diego County, California, where he has had unusual opportunity to secure information on the nesting of the Band-tailed Pigeon (*Columba fasciata fasciata*). As the literature on this subject is meager, he has, at my request, been good enough to supply me with his notes, from which I have made the following condensed transcription:

"The summer of 1922, the first year I occupied the cabin, a pair of pigeons often visited the oak trees across the ravine from me. For two weeks I explored the woods in an unsuccessful attempt to locate their nest, and then, on August 25, it was discovered by a mere chance. George Smith, a boy who was visiting me, was collecting pine cones and climbed a tree about twenty feet high whose branches were loaded with cones. It happened that his belt caught on a dead limb and, as he gave the branch a shake, a Band-tailed Pigeon left her nest on the horizontal branch of a black oak, within a few feet of the boy. She alighted in the top of a pine tree about twenty-five feet away. The nest, which was about fifteen feet from the ground, contained one egg.

"I visited the spot frequently during the next two weeks and, by a system of gradual approach, was finally able to place my camp chair within three feet of the oak tree without causing the incubating bird any uneasiness. September 8 the baby pigeon was in the nest. While it was small the mother bird stayed near the nest, sometimes sheltering the baby with her wings during the mid-day heat; but when it was about ten days old she remained away from the nest for hours at a time. On September 17 the nest was photographed by Clinton G. Abbott, Director of the Natural

History Museum, San Diego. That day the female left the oak tree in the early morning and returned at twilight; after quickly feeding the young she left again. Next day she left at daybreak and returned at sundown. For more than a week after that I kept the youngster with me during the day, letting him perch on my finger or hop about on the cabin floor, returning him to his nest before evening. On the morning of October 2 I found that the young bird had climbed from the nest and was sitting on a branch of the oak tree, where he remained until late in the afternoon. That night he roosted on the high limb of a nearby pine tree. On October 4 he left the neighborhood and I did not see him again. Measurements of the nest were: diameter 8 inches, thickness 3 inches; construction rather bulky, a pile of oak and squaw-bush twigs, with no lining; count of twigs used, 150. The male was observed about the nest only twice.

Fig. 43. BAND-TAILED PIGEON SQUAB IN NEST. MESA GRANDE, SAN DIEGO COUNTY, CALIFORNIA. PHOTOGRAPHED SEPTEMBER 17, 1922.

"On October 12, 1922, while looking for pine cones, I accidentally discovered a Band-tailed Pigeon sitting on her nest about ten feet above the ground in a live oak tree near a country road. The nest was remarkably well constructed of oak twigs, with a thick lining of pine needles, and contained one egg. I had the nest under observation for five days, when I was obliged to return to San Diego. Ralph Bushnell, a neighboring rancher and reliable observer, reported that a few days after I left a hard rainstorm swept over the mountains. He found the pigeon brooding during the first day of the storm, but she left the nest some time on the following day and did not return to it again.

"On May 15, 1923, Bushnell found a Band-tailed Pigeon's nest about fifteen feet up on a large horizontal branch of a white oak tree situated about thirty feet from our first 1922 nest. It contained one egg, which later hatched and in due time the squab left the nest. When I came to my cabin on July 3, I found that a Mourning Dove had built a nest of pine needles on top of the pigeon's oak-twig nest and was incubating two eggs. I had the nest under observation till the young flew, when I collected it.

"On September 15, 1923, Bushnell and Miss Lela Stillman, while riding horseback near my cabin, flushed a pigeon from her nest twenty feet above the ground on the horizontal limb of a white oak tree. They reported the find to me and when I went to the nest the bird flew off at a great rate, uttering a hoot-like note and clapping her wings. The nest contained one egg. Shortly thereafter a cold rain began falling all over the mountain country and continued without cessation for days. It rained until I thought that the bird would drown on her nest or die from exposure; but whenever I visited the nest I found her at her post. I believe that for at least forty-eight hours she could not have left her egg without its being chilled and spoiled. On the afternoon of September 22 the sky cleared and the sun shone brightly; and then I saw the bird leave her nest for a short time. That night another storm swept over the region. The next morning the pigeon was not at her nest, nor was she seen again. On September 24 I collected the nest and egg and presented them to the Natural History Museum, San Diego.

"That successive young pigeons are sometimes raised in one nest the same season was proved by Bushnell in 1925. He found a nest on March 8, containing one egg, from which the squab hatched and grew up. Then the pigeon laid an egg in the same nest and started to incubate. The second young bird hatched about the middle of May and lived to leave the nest.

"Five Band-tailed Pigeons' nests were located in the neighborhood of the cabin during 1926, all found by George Smith: (1) July 3; in white oak about twenty-five feet up; one egg; deserted prior to July 15, when I returned to Mesa Grande after an absence. (2) July 21; in white oak about eighteen feet up on small branch, almost hidden in a mass of poison oak; both pigeons left the tree, uttering a succession of harsh notes; one egg; female unusually timid and deserted after five days; nest small and poorly constructed; egg collected July 26 and donated to the Natural History Museum, San Diego. (3) August 2; in black oak about thirty-five feet up, built in a bunch of mistletoe; one egg; bird sat close and returned within five minutes. On the morning of August 19 the pigeon was absent and when the nest was examined about 9:30 A. M. the egg was found to be pipped. By 1:30 the youngster was completely out of the shell, but the old bird never returned. About 6 P. M. we took the squab and put it in a Mourning Dove's nest, where it was apparently thriving on August 22, when I left Mesa Grande. (4) August 4; in black oak about fifteen feet up, on large horizontal limb overhanging road; one egg; both birds seen near nest. (5) August 8; in white oak about fifteen feet up; one egg."—CLINTON G. ABBOTT, *Natural History Museum, Balboa Park, San Diego, California, September 21, 1926.*

Food of the Spotted Owl.—The Spotted Owl (*Strix occidentalis*) is a bird of the night. I have never yet observed one moving about in the day time, when it seeks some dark, shady canyon or dense tree wherein to spend the daylight hours in seclusion. As a result of these habits it is a bird that is seldom seen. During August of this year I found in a dark canyon west of Reserve, New Mexico, three young Spotted Owls that had left their nest and were seeking their own livelihood. They were so tame that I succeeded in capturing one of them, and, wishing to study the bird and its diet, I brought it home. Placed in a small barn I have which was literally overrun with mice and rats, in a very short time the bird had cleaned the barn of these pests. I kept it in a big box for a while and offered it the bodies of several birds and also parts of chicken, but these the owl absolutely refused to touch, even when very hungry. I believe he would have starved before eating bird or fowl.

My owl was very tame and seemed to enjoy having me stroke his fluffy feathers. When I approached with a rodent I could notice an expression of pleasure creep into his countenance—it seemed as if he actually smiled! He never refused at any time of day to take a squirrel, chipmunk, rat, or mouse from my hand. He would also eat rabbit, but he was most fond of the small rodents. One day I took two mice to him, one in each hand, and gave him one which he took first with his beak and then changed to his talons. Then he spied the other in my hand, at my side. I suppose he thought I had fooled him, for he first thrust the foot that was holding the mouse clear up in front of his eyes, then looked down again to the mouse I held. When I offered it to him he at once took it from my hand and seemed very much pleased. I had intended

to take some pictures of him but I changed him to another building and the first night he slipped out. I suppose he at once returned to his mountain fastness.—ED. S. STEELE, *Reserve, New Mexico, November 26, 1926.*

New Bird Records from Lower California.—In the course of field collecting carried on the past two years in northern Lower California, the representatives of the Museum of Vertebrate Zoology working there have found several species or subspecies of birds apparently not previously taken in that territory. In order to make a knowledge of these occurrences available without undue delay to other active students of bird geography, a list of them with the chief appertaining facts is now presented, as follows.

Columba fasciata fasciata. Northern Band-tailed Pigeon. Specimens taken by C. C. Lamb as follows: Near San Antonio ranch, 2100 feet altitude, on upper Santo Domingo River, Sierra San Pedro Martir, April 25 (no. 47223, Mus. Vert. Zool.) and April 27 (no. 47224), 1925; Concepcion, 6000 feet, Sierra San Pedro Martir, November 13, 1925 (no. 46909). Seen also by Lamb in 1926, in October, in the neighborhood of Hanson Laguna, Sierra Juarez, November 15 at San Pablo, 10 miles southeast of Alamo, about latitude 31° 35′, and in 1927, January 20, in the live-oak canyons in the vicinity of Guadalupe Valley, latitude 32°.

Sphyrapicus thyroideus thyroideus. Pacific Williamson Sapsucker. Four specimens: two from near La Grulla, 7200 feet altitude, Sierra San Pedro Martir, October 2 and 13, 1925; one from Laguna Hanson, 5200 feet, October 25, 1926; and one from El Valle de la Trinidad, 2500 feet, latitude 31° 20′, November 18, 1926. The first, a female (no. 46248), was shot by J. Grinnell from the trunk of a large Jeffrey pine which showed a great amount of boring and bleeding from within ten feet of the ground up to a height of fully 100 feet. The pits were deep and in uniformly horizontal rows. The evidence seemed to show that the bird had been there a long while, and at the time the above notes were written both of us thought the species likely to be permanently resident in the San Pedro Martirs. The second bird, a male (no. 46249), was flushed by C. C. Lamb from a cascara bush and flew to a small pine; in this case, there was no circumstance to indicate that the bird might not have been a vagrant. The third sapsucker, a female (no. 49844), was shot by Lamb from the trunk of a willow at the edge of a meadow in the pine belt of the Sierra Juarez, likewise with no indication at hand of permanence in the region. The fourth Sapsucker, also a female (no. 49845), from Valle de la Trinidad, was shot by Lamb from the trunk of a willow near a stream in a canyon. The life-zone here was not above Upper Sonoran (altitude below 2500 feet), and the bird in this locality, which is just between the San Pedro Martirs and the Sierra Juarez, was certainly only a vagrant or transient. Thus, there is so far no positive evidence that the species is other than a winter visitant in Lower California. The great amount of "sign" in the first instance recited above may have been due to the return of the bird to the same spot in several successive winters.

Asyndesmus lewisi. Lewis Woodpecker. Found to be fairly common in the autumn of 1925 around the Meling ranch at San José, 2500 feet altitude, near latitude 31°. Four specimens were taken by Grinnell or Lamb, September 29, November 9 and 10 (nos. 46250, 46930-32). The pears and other fruits in the orchard at the ranch constituted the feature of attraction. Also a few seen by Lamb, January 20, 1927, in the vicinity of Guadalupe Valley, latitude 32°.

Stellula calliope. Calliope Hummingbird. Four specimens from neighborhood of Vallecitos, 8500 feet altitude, Sierra San Pedro Martir, June 2, 3 and 10, 1925. All are adult males, taken by A. E. Borell. One (no. 47279, June 2) was shot as it was doing "aerial stunts" above a female perched on a dry willow twig at the edge of a meadow. About a dozen all told were seen, and it was evident that the species was breeding.

Otocoris alpestris leucolaema. Desert Horned Lark. No. 49914, Mus. Vert. Zool.; adult female; El Valle de la Trinidad, 2500 feet altitude, latitude 31° 20′, Lower California; December 3, 1926; collected by C. C. Lamb, orig. no. 6842. "One of several flying over the meadow."

Loxia curvirostra bendirei. Bendire Red Crossbill. Fourteen specimens, nos. 47387-47400, all adults, taken by C. C. Lamb and A. E. Borell, June 4 to 12, 1925, at Vallecitos, 8500 feet, Sierra San Pedro Martir. Crossbills have been recorded hitherto from Lower California only from Guadalupe Island (several times, beginning with

Bryant, Bull. Calif. Acad. Sci., II, 1887, p. 297) and Cedros Island (McGregor, Osprey, III, 1899, p. 141). While these ascriptions have usually been put under the name *stricklandi*, examination of six Guadalupe Island skins in the Carnegie Museum, by the senior author of the present paper, shows them to be *bendirei*. (See, also, Oberholser, Auk, XXXIV, 1917, p. 328.) The location of the one specimen taken on Cedros Island is unknown to us, so verification of its subspecific identity has not been possible.

Loxia curvirostra stricklandi. Mexican Red Crossbill. Eight specimens, nos. 47401-08, adults and one streaked young, taken by A. E. Borell and C. C. Lamb, May 31 to June 12, 1925, at Vallecitos, 8500 feet, Sierra San Pedro Martir; six specimens, nos. 49983-88, adults and two streaked young, taken by Lamb, October 7 to 19, 1926, at Laguna Hanson, 5200 feet, Sierra Juarez.

Passerella iliaca sinuosa. Valdez Fox Sparrow. Three specimens, nos. 50186-88, two females, one male, all adults, taken by C. C. Lamb, January 5 and 6. 1927, at Las Cruces, 2600 feet, twenty miles east of Ensenada. There is only one previous record of the brown-colored type of fox sparrow from Lower California: Guadalupe Island, one specimen, February 16, 1886 (Bryant, Bull. Calif. Acad. Sci., II, 1887, p. 303). This specimen was doubtless destroyed in the San Francisco fire. It was recorded under the name "*unalaschensis*", which name as then used applied to a group of subspecies. Now that *sinuosa* has been taken farthest south of all the brown-colored races, the Guadalupe bird may be assumed to have been of that race also.

Passerella iliaca altivagans. Alberta Fox Sparrow. One specimen, no. 46373, immature male, taken October 8, 1925, by J. Grinnell near La Grulla, 7200 feet, Sierra San Pedro Martir.

A previous record of this race is by Huey (Auk, XLIII, July, 1926, p. 358), of a specimen taken at Santo Domingo, February 26, 1925. The determination of this bird has been verified by Mr. Swarth, the authority on *Passerella*, who is also responsible for the naming of all the specimens in the Museum of Vertebrate Zoology here recorded.

Passerella iliaca schistacea. Slate-colored Fox Sparrow. Specimens at hand as follows: no. 47022, immature male, Concepcion, 6000 feet altitude, Sierra San Pedro Martir, November 13, 1925; nos. 50160-63, four males, El Rayo, 4700 feet, Sierra Juarez, October 18, 1926; no. 50164, female, Laguna Hanson, 5200 feet, Sierra Juarez, October 18, 1926; nos. 50165-78, 14 specimens, both sexes, adults and immatures, Los Pozos, 4200 feet, northern end of Sierra Juarez, October 28 to November 2, 1926. All taken by C. C. Lamb. Evidently a common winter visitant.

Passerella iliaca canescens. White Mountains Fox Sparrow. Two examples, nos. 50179-80, adult male and female, October 30 and November 2, 1926, Los Pozos, 4200 feet, northern end of Sierra Juarez; taken by C. C. Lamb.

Passerella iliaca monoensis. Mono Fox Sparrow. Two specimens, nos. 46378-79, adult and immature males, taken by J. Grinnell, October 3 and 8, 1925, near La Grulla, 7200 feet, Sierra San Pedro Martir; one, no. 47023, adult male, taken by C. C. Lamb, November 12, 1925, at Concepcion, 6000 feet, Sierra San Pedro Martir; one, no. 50185, adult female, taken by Lamb, January 5, 1927, at Las Cruces, 2600 feet, twenty miles east of Ensenada.

Passerella iliaca mariposae. Yosemite Fox Sparrow. Three specimens, nos. 46375-77, female, male, female, all adults, taken October 4 and 9, 1925, by J. Grinnell and C. C. Lamb near La Grulla, 7200 feet, Sierra San Pedro Martir; one, no. 50181, male, taken October 18, 1926, by C. C. Lamb at El Rayo, 4700 feet, Sierra Juarez; one, no. 50182, adult male, taken October 28, 1926, by Lamb at Los Pozos, 4200 feet, in northern end of Sierra Juarez; two, nos. 50183-84, adult male and immature female, taken January 8, 1927, by Lamb at Las Cruces, 2600 feet, twenty miles east of Ensenada.

Passerella iliaca megarhynchus. Thick-billed Fox Sparrow. One specimen, no. 46374, adult male, taken by C. C. Lamb October 12, 1925, near La Grulla, 7200 feet, Sierra San Pedro Martir.

The only previous record of Fox Sparrows from the San Pedro Martirs is by Anthony (Zoe, IV, 1893, p. 242) who records "a few" as "seen" there by him in October. He uses the name "*megarhyncha*", so a large-billed gray race must have been concerned, but which of the finely split subspecies now recognized we do not know. Whether Anthony saved specimens is doubtful, since as far as the senior writer could find, none is contained in the Anthony collection which now belongs to the Carnegie Museum in Pittsburgh.

Dendroica cerulea. Cerulean Warbler. One specimen, no. 46422, Mus. Vert. Zool.; first-winter female; near La Grulla, 7200 feet altitude, Sierra San Pedro Martir, Lower California; October 2, 1925; collected by C. C. Lamb, orig. no. 4982. Shot from tip of small willow at creek-side. Not previously recorded west of New Mexico (see Ridgway, Birds of N. and Mid. Amer., II, 1902, p. 571).

Euthlypis lachrymosa tephra. Western Fan-tailed Warbler. One specimen, no. 47045, Mus. Vert. Zool.; adult female; Santo Domingo, near latitude 30° 45', Lower California; December 31, 1925; collected by C. C. Lamb, orig. no. 5569. Was on the ground in a damp spot beneath a pepper tree on the Hamilton ranch. Had been seen several times previously the same day, flying nervously from object to object on the ground, at times flirting its tail sidewise and uttering a single lisping whistle. A species of western Mexico (see Ridgway, Birds N. and Mid. Amer., II, 1902, p. 738).—J. GRINNELL and C. C. LAMB, *Museum of Vertebrate Zoology, University of California, Berkeley, January 24, 1927.*

The Arizona Race of the Sulphur-bellied Flycatcher.[1]—The writer has for some years suspected the advisability of providing with a name that portion of the Sulphur-bellied Flycatcher population which breeds in the extreme northwestern part of the range of the species. Material which subsequently has come to hand has served further to emphasize the first impressions, and the Arizona race is therefore named as

Myiodynastes luteiventris swarthi, subsp. nov. Arizona Sulphur-bellied Flycatcher.

Type.—Male adult; no. 8985, collection of Donald R. Dickey; Huachuca Mountains, Arizona; September 8, 1913; collected by A. B. Howell; original no. 2656.

Subspecific characters.—Resembles *Myiodynastes luteiventris luteiventris* Sclater, of southern Mexico and Central America, but under parts paler yellow; streaking of under parts less conspicuous and averaging narrower, particularly on flanks; upper parts paler with edgings of feathers grayer (less yellowish) buff; edgings on wing coverts whiter and usually broader; cinnamon rufous of lower rump, upper tail coverts, and tail paler.

Range.—High mountains of southern Arizona and probably adjacent parts of Mexico.

Remarks.—The Arizona race is named with full appreciation of the extraordinary individual variation to which this species is subject. The differences between the two races are fully as prominent in the juveniles as in fresh adults, but are obscured in very worn post-breeding adults. Mr. Ridgway (Birds of North and Middle America, part 4, 1907, pp. 656-657) comments on the heavy streaking and smaller size of extreme southern birds, but in the series at hand there seem to be no significant size differences, either between topotypes of *luteiventris* from Vera Cruz and *luteiventris* of Central America, or between *luteiventris* and *swarthi*. In coloration the Vera Cruz and Yucatan birds are variously intermediate, but on the average fall unmistakably with the richly colored and heavily streaked Central American series.

Material necessary in the above work is gratefully acknowledged from the American Museum of Natural History, Dr. Louis B. Bishop, Mr. Donald R. Dickey, Mr. J. E. Law, the Museum of Vertebrate Zoology, and above all from Mr. Harry S. Swarth whose splendid series of personally collected Arizona specimens has confirmed the desirability of separating the Arizona race.

Specimens examined.—Myiodynastes luteiventris luteiventris: Mexico: Vera Cruz (Jalapa, 2, Orizaba, 1); Yucatan ("Yucatan", 1, Calotmul, 1). Salvador: San Salvador (San Salvador, 4, Volcan San Salvador, 1); La Libertad (Sitio del Niño, 1); San Miguel (Lake Olomega, 6, Volcan San Miguel, 1). Costa Rica: Guanacaste (Las Cañas, 1). *Myiodynastes luteiventris swarthi*: Arizona (Chiricahua Mountains, 6, Huachuca Mountains, 18).—A. J. VAN ROSSEM, *Pasadena, California, December 18, 1926.*

The Colombian Royal Flycatcher *(Onychorhynchus mexicanus fraterculus)* in the Caribbean Watershed in Costa Rica.—*Carriker in his "Birds of Costa Rica" states that this beautiful tyrant occurs only on the Pacific side of the country; and, furthermore, Ridgway in his "Birds of North and Middle America" (part IV, p. 356) lists only localities upon that slope. I can record a pair taken at Guapiles (Old Line R. R.), July 22, 1926, and now in the collection of Mr. Henry O. Havemeyer, of New York.* This pair was taken in a situation such as the species generally favors, namely, undergrowth in a humid river valley.—AUSTIN SMITH, *San José, Costa Rica, September 7, 1926.*

[1] Contribution from the California Institute of Technology.

A New Race of Crissal Thrasher, from Northwestern Lower California.—A rather unexpected incident of the field work being carried on by the Museum of Vertebrate Zoology in northwestern Lower California is the finding there of an apparently new race of Crissal Thrasher. This may now be named and characterized, as follows:

Toxostoma crissale trinitatis, new subspecies. Trinidad Crissal Thrasher.

Type and type locality.—Male adult; no. 50,273, Mus. Vert. Zool.; El Valle de la Trinidad, 2500 feet altitude, lat. 31° 20′, Lower California; November 15, 1926; collected by Chester C. Lamb, original no. 6650.

Diagnosis.—Similar in general characters to *Toxostoma crissale crissale* Henry, as judged from a series of specimens from the Colorado Valley, in Arizona and California, but bill longer and distinctly more curved (as seen in lateral profile), and tone of coloration darker, more slaty. This latter qualification applies to both upper and under surfaces, and particularly to the wings and tail, which are between fuscous and fuscous-black (of Ridgway, 1912), rather than near mummy brown. The bill, feet and claws also average blacker.

Measurements.—Averages of the 5 males and 1 female of *trinitatis* available: wing 98.3 millimeters, tail 140.0, tarsus 34.4, culmen 36.6, bill from nostril 33.0; of 5 males and 1 female (selected as least worn) of *crissale* from the Colorado Valley: wing 97.0, tail 139.0, tarsus 34.0, culmen 33.8, bill from nostril 29.9.

Range.—Known only from the vicinity of the type locality, as above. This is a rather extensive, east-west valley which separates the Sierra San Pedro Martir immediately on the south, from the Sierra Juarez on the north. The Trinidad Valley is thus part of an inter-mountain pass, and through it many desert-side plants and animals have gone more or less distance onto the Pacific side, and certain Pacific-side species have extended in the opposite direction. The rather unusual assemblage of animal species to be found there results.

Remarks.—The first definite record I can find, applying to the race now newly named, is a most interesting one. It is taken from a letter written by Lyman Belding to Walter E. Bryant and quoted by the latter (Proc. Calif. Acad. Sci., ser. 2, II, 1889, pp. 314-315), as follows:

"CRISSAL THRASHER.—'One specimen, the first ever taken in Lower California, was shot about the middle of May, 1885, ten or twelve miles northwest of San Pedro mountains from a company or family of four. The remaining three were very shy, and after pursuing them in every direction, about an hour, I reluctantly quit the chase as our animals needed water, and we knew we must travel two or three hours before finding any. This was but one of many experiences while collecting in different parts of Lower California, when the want of water interfered seriously with my success. During this trip of two weeks, we passed two nights at different localities without a drop of water.' "

Subsequently, Ridgway (Birds N. and Mid. Amer., IV, 1907, p. 208) cites Trinidad Valley as a locality in Lower California whence the Crissal Thrasher had been reported (evidently by Belding). Now, in the autumn of 1926, Mr. Lamb, in working this valley for the Museum of Vertebrate Zoology, found the species there in fair numbers. The six specimens he obtained were all shot in or near mesquites.

While this thrasher (subspecies *crissale*) occurs as a characteristic inhabitant of the mesquite association in the Colorado delta, south into Lower California to the east base of the Cocopah Mountains (Stone and Rhoads, Proc. Acad. Nat. Sci. Phila., 1905, p. 686), there is apparently a broad interval now without any, as permanent residents *of the species, between there and Valle de la Trinidad. The colony in the latter locality (subspecies trinitatis) is seemingly far sequestered, and has existed for untold generations* under the potent influences of the San Quintin climatic area.

In naming the present new race, I am not concerning myself about the nomenclatural question raised by Oberholser (*Auk*, XXXVII, 1920, p. 303). Personally, I do hope no change be ruled, by which the current name of the species, the one under which it has always been dealt with in literature, would be replaced by another that came into being solely by mistake.—J. GRINNELL, *Museum of Vertebrate Zoology, University of California, Berkeley, January 22, 1927.*

Black-and-white Warbler Again in San Diego County.—On December 24, 1925, while making a census of birds for submission to the magazine "Bird-Lore", Laurence M. Huey and the writer watched for some time a Black-and-white Warbler (*Mniotilta varia*) in a group of live oaks on the ranch of H. H. Weddle, Dehesa, San Diego County, California. The species has long been familiar to the writer, and was unmistakable. We believe this is the second record for San Diego County (see Condor, XXIV, 1922, p. 100) and may perhaps be worthy of publication.—CLINTON G. ABBOTT, *Natural History Museum, Balboa Park, San Diego, California, September 21, 1926.*

Pectoral Sandpiper in Washington in Spring.—On May 14, 1926, I watched for half an hour a Pectoral Sandpiper (*Pisobia maculata*) in an open grassy spot where water was standing, almost in the middle of the Indian village of La Push, Clallam County, Washington. The bird was so tame that I finally had to startle it to make it fly; in flight it uttered its characteristic *"kreek"*. According to notes given me by Dr. Walter P. Taylor, there is only one previous record for the species in Washington in spring. The bird is not uncommon in the fall.—RALPH HOFFMANN, *Carpinteria, California, January 1, 1927.*

EDITORIAL NOTES AND NEWS

Plans for the Second Annual Meeting of the Cooper Ornithological Club, to be held this year in the San Francisco Bay region, April 29 to May 1, 1927, are maturing. A program of written papers, scientific and otherwise, is assured, and an exhibition of the large, elaborately illustrated and beautifully bound works on ornithology in the University of California Library is planned as one event of the meeting. There will be on display such sets as Gould's "Monograph of the Hummingbirds", Mathews' "Birds of Australia", Beebe's "Monograph of the Pheasants", Phillips' "Natural History of the Ducks", and many others of similar artistic, historical, and outstandingly ornithological interest. On one evening there will be a dinner and on another a general reception for Club members and visitors. The daily meetings will be open to the bird-loving public and members are urged to bring any friends who are interested.

The January, 1927, number of the "Standard Oil Bulletin" sets forth in an interesting fashion the various things that have been done to abate the danger of oil to ocean bird life. Nearly all of the oil companies have finally introduced methods which have in large measure done away with the pollution of navigable waters at sea as well as in certain places inland. This accomplishment, although not as yet perfectly realized, is the outcome of several years of effort, interviewing company officials and in other ways, by certain representative bird-lovers. To Dr. Barton W. Evermann and Mr. C. B. Lastreto, representing officially the Cooper Ornithological Club as well as certain other scientific societies, the chief credit for this accomplishment should be given. These men gave abundantly of their time, energy and thought. This contribution of theirs, and of a few others of like aims associated with them, has probably resulted in the saving of the lives of many thousands of sea birds along our western coast.

The Birds of the Pacific Coast, by Ralph Hoffmann, with illustrations by Allan Brooks, will be published by the Houghton Mifflin Company late in March or early in April, 1927. The text will run to a little over 350 pages and will treat of about four hundred species which occur regularly in California, Oregon and Washington. There will be ten plates in color, figuring about fifty species, and over two hundred illustrations in black and white. The book is intended as a guide to field identification of birds. Mr. Hoffmann has made every effort to give from original observations fresh and helpful portraits of birds in their characteristic backgrounds. We have examined some of his "copy" and we prophesy a favorable reception for his contribution.

It seems that, in the January issue of THE CONDOR (p. 80), the Editor let a limpet get into print not only as a *bivalve* but also as a *crustacean!* It is, of course, the function of the Editor to catch just such blunders; and in this unfortunate instance he feels properly humbled.

By official action, the institution in Ottawa, Canada, long known as the Museum of the Geological Survey of Canada, or simply as "Victoria Memorial Museum", is now to be designated as the Canadian National Museum. This change, certainly for the better, indicates the true nature of the institution in question; for it constitutes a worthy parallel in function and importance to our own United States National Museum.

Our faith in the dependability of the *Literary Digest* has been severely shaken as a result of reading in its issue of August 7, 1926, an account of the California Condor. We had always supposed that this representative magazine took pains to make sure of the authenticity of the informational material presented in its various departments. But here we seem to have a hodgepodge of guess, near-fact and outright misstatement, in regard to a subject we *do* happen to know a little about. Here are some examples: The California Condor is "probably the largest flying bird in the world." The wing spread is nine "to twelve feet." It is "a direct descendant of the prehistoric super-condor, *Teratornis merriami*". "Once paired," it "remains mated for life". "If one of a pair dies, it is believed that the remaining bird never takes another mate." "Condors are believed to live to the age of 100 years." "According to stories told by early residents of California, the Condor was monarch of the air, easily able to whip a golden, or even a bald, eagle." "Extinction of the California condor . . . is due largely to the desire of the miners in the days of the gold rush . . . for the large and hollow quills in which to carry gold dust."

The above statements are cited, without any cautionary comment, from clearly uncritical sources. What do readers of *The Condor* think of them? While the article in question contains a plea for the protection of the California Condor, it is headed with the insidiously suggestive caption, "A Bird that Lays $1,500 Eggs". But, naively, we are told that "collectors for museums nearly completed the job of extermination before the State of California took a hand and protected the birds and their eggs with heavy penalties."

Seriously, there is a worthy piece of work pressing for attention before it is too late, namely, the writing of a true and exhaustive natural history of the California Condor.

PUBLICATIONS REVIEWED

CHECKLIST OF THE BIRDS OF AUSTRALIA.—With our own Check-list of North American Birds in course of preparation, this newly published Checklist of the birds of Australia* will naturally be scrutinized eagerly by American ornithologists. The scope of the two works is essentially the same, to the extent that each aims to give a reliable list of the birds of a given area, but manner of treatment differs rather widely.

The Australian Checklist gives the following information: (1) The consecutive number of the species. (2) The accepted generic name (with the subgeneric name in parentheses). (3) The specific name. (4) The vernacular name. (5) The consecutive numbers of the species in the first edition of the Official Checklist, in parentheses. (6) The number of the colored plate in Gould's *Birds of Australia*. (7) The species number in Gould's *Handbook to the Birds of Australia*. (8) The number of the plate in Mathews' *Birds of Australia*. (9) The range of each bird in Australia and beyond, in abbreviated form. (10) The original reference of the accepted specific name. (11) The various names used in Australian works, given in chronological order.

As regards the last (11), "no opinion whatever is expressed as to the validity or otherwise of the many subspecific names proposed", but we wish there had been. Undoubted synonyms are mixed with the names of races whose authenticity is equally undoubted, to the everlasting bewilderment of a reader who, like the reviewer, has but a casual knowledge of the region covered.

As is pointed out in the introduction, every item is condensed to the utmost. With abbreviations for nearly every term used, general, bibliographical, or geographical, with small-sized type and close-set lines, a great mass of information is condensed within a very few pages. As compared with our own Check-list (1910 edition), of about the same sized page, our volume treats of 768 species in 374 pages, the Australian list, of 707 species in 115 pages. The extremely condensed

* The official checklist | of the | birds of Australia | Compiled by a Committee | of the | Royal Australasian Ornithologists' Union | second and revised edition | with appendix: | scientific names—notes and pronunciation | By | H. Wostenholme, B. A., M. B. O. U., R. A. O. U. | Wahroonga, Sydney | Published by the | Royal Australasian Ornithologists' Union | 1926 | 212 pages, 1 plate (map). (Copies available from the R. A. O. U. at 12 s. 6d.)

form here adopted is confusing to one used to more extended treatment of such subject matter, and it certainly would not be a popular innovation in the American volume. Then, too, in our own case, we have considered "range" (that is, the distribution of species and subspecies) as a matter of prime importance, to be stated with as much attention to detail as our knowledge permits. Here, it is given in the most general manner imaginable, much as though we were to describe subspecies as occurring in the "New England States", or in the "Northwest".

However, these details of treatment aside, there can be no question as to the authoritativeness of this Checklist, considering the personnel of the committee that had it in hand. The following principles that are followed, as brought out in the introductory "report of committee", will commend themselves to a good many, at least, of the ornithologists of this country, as they do to the reviewer. "(1) 'The same name for the same bird' as on British and American lists. Thus Australians took their place alongside the ornithologists of Britain and America, and accepted to the full the principles of the International Code of Zoological Nomenclature and the decisions of the International Commission of Zoological Nomenclature; (2) 'large genera' as used by some British Ornithologists and advocated in America; (3) that where a series of races or forms connected up certain forms with others, the whole should constitute one species."

Certain compromises were effected with Mr. Gregory M. Mathews regarding nomenclatural usage, with, in particular, the happy result that Mr. Mathews consented "to accept large genera if the numerous generic names as used in his later lists were included as subgenera." It is fortunate that these compromises should have been arrived at, with the result that the Checklist may be generally adopted and used.

The several appendices (pp. 116-142), covering the derivation, meaning, and pronunciation of the accepted scientific names of Australian birds, constitute a feature of the volume that will be useful to bird students in all parts of the world. Incidentally, many of Mr. Wostenholme's comments upon names shed side-lights upon personal or national historical events that form most enthralling reading, and this on pages that to the casual glance appear to be about as dry as those of a telephone directory.

The reviewer has no knowledge of Australian birds, and can form no opinion regarding the treatment of any particular species or subspecies, but the course that has been followed by the committee in charge of the compilation of the Checklist, and the appearance of the volume throughout, carry the conviction of an excellent piece of work accomplished. The Australian Committee would appear to have done its share toward the accomplishment spoken of in the closing paragraph of its introductory report, where the hope is expressed "that this second edition of the Official Checklist . . . will prove that a considerable step has been taken towards the long-proposed authoritative official list of the Birds of the World—the *Systema Avium*—the aspiration of every student and bird-lover."—HARRY S. SWARTH, *Museum of Vertebrate Zoology, Berkeley, California, September 30, 1926.*

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

DECEMBER.—The December meeting of the Cooper Ornithological Club, Northern Division, was held at the Museum of Vertebrate Zoology, Berkeley, on December 16, 1926, at 8:00 P. M. In the absence of President Allen, and at the request of Vice-president Carriger, Mr. C. B. Lastreto occupied the chair, with about sixty-five members and guests in attendance. Minutes of the Northern Division for November were read. The name of Miss Anne R. Richardson, Berkeley Inn, Berkeley, California, was presented for membership by Mr. Daniel Rowen.

The following resolution was presented by Mr. Grinnell and unanimously adopted by the Division:

WHEREAS, in the death of Dr. Frank H. Knowlton on November 22, 1926, the Cooper Ornithological Club lost a loyal member of sixteen years standing, and one, furthermore, who has contributed to the general knowledge of birds worthily, on a basis of scholarly research, be it

RESOLVED that the Northern Division of our Club hereby place on record this statement of our high esteem of Dr. Knowlton as a man, and of his ornithological work; and be it further

RESOLVED that the Secretary transmit to his widow a copy of these resolutions.

(Signed) Joseph Grinnell, Ralph W. Chaney, E. Raymond Hall.

Nominations of officers being a function of the December meeting, Mr. Carriger presented the following slate: President, Mr. Tracy I. Storer; Vice-president, Mr. Joseph Mailliard; Secretary, Mrs. Joseph Grinnell. Nominations were then closed.

Mr. Joseph Mailliard reported upon his experiences with the Ferruginous Rough-legged Hawk in northeastern California. After endeavoring on three separate field trips to secure a specimen, three came to hand within four days. Mr. Lastreto made some interesting remarks upon the status of the Mockingbird on the Peninsula, and Mr. Cain reported the fact that a bird of this species had been observed on the Stanford campus. Mrs. Carr announced the discovery of an exotic bird in Live Oak Park near the aviary. The bird proved to be a Japanese Robin, undoubtedly escaped from some cage.

Mr. Ralph W. Chaney then entertained the Club with a most interesting illustrated talk upon "Birds by the Wayside in Mongolia". Mr. Chaney modestly disclaimed the often heard statement that the American Museum Expedition discovered the dinosaur eggs, saying that the pre-Mongol race of man which inhabited the Gobi 25,000 years ago had done that, piercing fragments of the egg shells for necklaces. The expedition found most birds very tame, and nesting in accessible places, because the Mongols never molest wild things. It is to be hoped that Mr. Chaney will put his observations into permanent form, for the benefit of those members who were unable to hear him, as well as of those who did have that pleasure and who may wish to renew their acquaintance with the birds of the Gobi—birds from the foot-padded Sand Grouse of the desert to the Snow Cocks on the upper slopes of the Altais.

Adjourned.—HILDA W. GRINNELL, *Secretary.*

JANUARY.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology, Berkeley, on January 27, 1927, at 8:00 P. M. President Allen occupied the chair and thirty-eight members were present. December minutes of the Northern Division were read and approved. November minutes of the Southern Division were read. The following proposals for membership were read: Mary C. Alexander, 2570 Cedar Street, Berkeley, California, by J. Grinnell; George Buckman, 1001 Throckmorton Avenue, Mill Valley, California, by J. Grinnell; Roland G. Eisenman, 2102 Montana Street, Oakland, California, by Brighton C. Cain; Henry Warrington, Sutter Creek, California, by H. S. Swarth.

A letter from the Secretary of the Pacific Division of the American Association for the Advancement of Science was read and discussed. It was requested that the Cooper Club send two delegates to the meeting of the Affiliations Committee, to be held in San Francisco, February 5, 1927. Since, insofar as the Chairman was able to ascertain, no member of the Northern Division of the Club plans to attend the June meeting of the A. A. A. S. in Reno, Mr. Borell moved that no delegates be nominated to attend the meeting of the Affiliation Committee. The motion was duly seconded and unanimously carried.

Upon the motion of Mr. Borell the following, those nominated at the December meeting, were elected to serve as officers of the Northern Division during 1927: President, Tracy I. Storer; Vice-president, Joseph Mailliard; Secretary, Hilda W. Grinnell. Since neither newly-elected president nor vice-president was present, ex-President Allen, upon the suggestion of Mr. H. S. Swarth, consented to occupy the chair for the remainder of the evening.

When called upon for reports of recent literature Mr. Swarth read an earnest paragraph from "Descriptions of some South African birds' eggs" by Austin Roberts (Ann. Transvaal Mus., vol. 11, 1926, p. 226), suggesting certain duties and privileges of oölogists, and Mr. Grinnell reviewed the new popular edition of Beebe's monograph of the Pheasants. Mr. Grinnell then turned to two older publications: Dana's "Two Years Before the Mast", from which he read the incident of Dana's meeting with Thomas Nuttall on the beach at San Diego in 1836; and a photostat copy of an article contributed to "Forest and Stream" in 1886 by Walter E. Bryant of the California Academy of Sciences and recording a visit to Cedros Island, Lower California.

Mr. Lastreto announced that the next meeting of the Audubon Association of the Pacific will be held in the Ferry Building, San Francisco, on the evening of February 10 and cordially invited Cooper Club members to attend. Mr. Brighton C. Cain reported being on the Stanford campus recently and noting many hundred Band-tailed Pigeons among the oak trees along San Francisquito Creek. Mr. Raymond Gilmore announced that he had this week found the nearly completed nest of a pair of Bush-tits and asked if this were not an early record. No one present had found Bush-tits in previous years nesting earlier than February 24.

The speaker of the evening was Mr. Jean M. Linsdale who gave an interesting and carefully prepared talk upon the

"Birds of Kansas". Mr. Linsdale described the topographical features and faunal areas of our central-most state and outlined the distribution of eastern and western birds within its borders. Mr. Linsdale pointed out the fact that many of the species of birds occurring in the San Joaquin and Sacramento valleys of California are also to be found in western Kansas. About four hundred species of birds are now known to occur in Kansas, while recently reported vagrants bring the number for California up to six hundred.

Mr. E. Raymond Hall reported an apparent influx of hawks and owls into the mouse-infested area about Buena Vista Lake. Adjourned.—HILDA W. GRINNELL, *Secretary.*

SOUTHERN DIVISION

OCTOBER.—The regular monthly meeting of the Cooper Ornithological Club, Southern Division, was held at the Los Angeles Museum at Exposition Park, Tuesday, October 26, 1926, at 8:00 P. M. The meeting was called to order by President Bishop with thirty-six members present. The minutes of the Southern Division were read and approved. September minutes of the Northern Division were read.

Applications for membership were as follows: Clarence Bretich, 690 Broadway, Gary, Indiana; Oscar M. Bryens, 1312 3rd St., Three Rivers, Mich.; Raymond B. Ellis, 1013 Aetna St., Connellsville, Penn.; Dr. Herbert Friedman, Biol. Lab., Brown University, Providence, R. I.; Kenneth L. Gordon, 304 Garfield St., Fort Collins, Colo.; A. B. Gould, 617 N. Cherokee Ave., Los Angeles, Calif.; Bess R. Green, Zool. Dept., Oregon Agricultural College, Corvallis, Ore.; Chas. O. Handley, 403 E. Jefferson St., Thomasville, Ga.; George T. Hughes, Box 153, Plainfield, N. J.; Aaron Marden, Eagle Island, So. Harpswell, Maine; Anthony W. Robinson, P. O. Box 426, Haverford, Penn.; and Mrs. Carl Tucker, 733 Park Ave., New York City; all proposed by W. Lee Chambers.

A communication from the Audubon Society was read regarding the movement to restore protection to the White Pelican and Cormorants. Dr. Bishop pointed out that the policy of the Club would of necessity be decided by the Board of Governors. However, it was moved by Dr. Miller that the sense of the meeting be in favor of the protection of these birds. The motion was seconded by Mr. Wyman and unanimously carried.

Due to the detention of Mr. Swarth in travel, the meeting was turned over to a series of discussions. Mr. van Rossem said a word about the museum conditions in Salvador. Mr. Pierce reported on the duck season at Bear Lake. The implantation of the eastern Cardinal in the El Monte River bottom, and the most recent fossil material from the McKittrick horizon, were subjects presented by Dr. Miller. Mr. Wyman told of his capture of a Derby Flycatcher near Los Angeles. Numerous other matters were discussed during the course of the evening.

Adjourned.—ALDEN H. MILLER, *Secretary.*

NOVEMBER.—The regular monthly meeting of the Southern Division of the Cooper Ornithological Club was held Tuesday evening, November 30, 1926, at the Los Angeles Museum at Exposition Park. The meeting was called to order by Vice-president Appleton. About one hundred and twenty members and friends were present. October minutes of the Southern Division were read and approved, and October minutes of the Northern Division read. The application of Judge Guy R. Crump, 1517 Fair Oaks Avenue, South Pasadena, California, proposed by Loye Miller, was read.

Mr. Wyman, seconded by Mr. Reis, moved to reopen the question of indorsing the move for the protection of White Pelicans and Cormorants, and further moved that the Southern Division Secretary communicate with the proper authorities stating that the Southern Division is highly in favor of the protection of these birds regardless of the decision made at the last meeting to let the Board of Governors determine the policy in this matter. The motion was unanimously carried.

The speaker of the evening, Mr. Vernon Bailey, gave an illustrated lecture on the Carlsbad Caverns and their animal life. Most unusual were the motion pictures that had been taken by magnesium torch light. The animal life within the caves was of course chiefly mammalian. Many species of bats and several mice were found in the caves. Mr. Bailey stated that no permanent modifications had taken place in the cave-inhabiting mice. Several lantern slides were shown of the birds found in the desert association about the entrance to the cave. The entire lecture was most interesting because of the many personal touches given by such a well-known and accurate naturalist as Mr. Bailey.

Adjourned.—ALDEN H. MILLER, *Secretary.*

For Sale, Exchange and Want Column.—Any Cooper Club member is entitled to one advertising notice in each issue free. Notices of over ten lines will be charged for at the rate of 15 cents per line. For this department, address W. LEE CHAMBERS, *Drawer 123, Eagle Rock, California.*

WANTED FOR CASH—The Auk, vol. I, no. 2; vol. III, no. 4; vol. VI, nos. 1 and 3; The American Osprey, Plymouth, Conn., vol. I, 1885, nos. 1 and 2; The Audubon Magazine, vol. II, no. 12; The Avifauna, Los Angeles, vol. I, Sept., 1897, no. 3; Bird-Lore, vol. II, no. 2; The Condor (Cooper Club Bulletin), vol. I, no. 3; The Hawkeye Ornithologist & Oologist, vol. I, no. 5; Journal of the Maine Ornithological Society, vol. V, no. 3; vol. VI, no. 1; Bulletin of the Michigan Ornithological Club, vol. III, nos. 1 and 2; The Oologist, Utica, all 1875, 5 vols.; The Oologists' Journal, Poughkeepsie, vol. I, 1891, no. 3; The Osprey, vol. IV, no. 3; vol. VI, no. 7; The Western Oologist, vol. I, nos. 1, 2, 3 (all issued).—KARL A. PEMBER, *Woodstock, Vermont.*

WANTED FOR CASH—The Auk, vol. 1, no. 2; vol. 2, no. 2; vol. 6, no. 1.—W. B. SAMPSON, *1005 N. San Joaquin St., Stockton, California.*

FOR SALE—Fauna Americana: A description of the Mammiferous animals inhabiting North America. By Richard Harlan, M. D. Small octavo; Philadelphia, 1825. A fine copy of a rare book; old calf. $4.00. The Age of Mammals, by Henry Fairfield Osborn; New York, 1910. About the best ever written on the subject. $4.50. —W. LEE CHAMBERS, *Eagle Rock, Los Angeles, Calif.*

WANTED—To buy first class bird skins of the following families and orders: Anatidae, Columbae, Limicolae, Gallinae, Rallidae; especially foreign species. Address—H. B. CONOVER, *6 Scott St., Chicago, Ill.*

FOR SALE—Traps for bird banders. W. B. B. A. supply. Last word in traps. Folding 4-compartment Potter Trap, $5. Top-opening Warbler Trap, automatic, $5. Trap doors, consisting of door, frame and tripping treadle, 60c each. — WESTERN BIRD BANDING ASSOCIATION, *418 Elm Ave., Pasadena, Calif.*

WANTED—Will pay ten (10) dollars for a copy of Bent's "Diving Birds", U. S. Nat'l. Museum Bulletin no. 107, in good condition.—JOHN B. HURLEY, *710½ East Chestnut St., Yakima, Washington.*

FRENCH OR GERMAN FIELDGLASSES, $5 up; stero-prism binoculars, 8-power, $15 up. Mirakel 3 oz. universal focus monoculars with 20-power attachment that converts it into a microscope; 3½-power $10; same in 5-power $12.50. Watch for the new Mirakel 7-power, 7 oz. binocular, $35. Everything in glasses from a Zeiss down. Satisfaction guaranteed after trial, or money refunded.—J. ALDEN LORING, *Box O 182, O-we-go, Tioga Co., N. Y.*

WILL EXCHANGE originals of my bird drawings (published, unpublished), in color, "wash" and pencil, for well-made typical skins of common birds, especially most of the smaller forms. Nos. 315 and 382 also wanted.— E. J. SAWYER, *Park Naturalist, Yellowstone Park, Wyo.*

WANTED FOR CASH.—Ridgway's "Birds of North and Middle America," part 2; Nidiologist, vol. 1, no. 2.—HOWARD ROBERTSON, *157 Wilton Drive, Los Angeles, Calif.*